(1)

Supreme Court, U.S.
FILED

[redacted]57 4 MAR 21 1995

OFFICE OF THE CLERK

No.

In The
Supreme Court for the United States
Term, October 1994

Nicolas Kaliardos,
Petitioner

v.

General Motors Corporation,

BASF Corporation,

H.B. Fuller Company, and

H.B. Fuller Automotive Products, Inc.,

Jointly and Severally,
Respondents

and

Daubert Industries, Inc.,
Respondent.

Petition for Writ of Certiorari to the United States Court of Appeals for the Federal Circuit

---

Petition for Writ of Certiorari

Nicolas Kaliardos
Pro Se, Petitioner
405 Moross Road
Grosse Pointe Farms,
Michigan
48236
(313) 884-6537

QUESTIONS PRESENTED FOR REVIEW RULE 14.1(a)

1. Did the Magistrate judge in the trial court error in holding that the evidence produced by Plaintiff in response to Defendant's motion for summary judgement did not create a genuine issue of material fact concerning whether accused product infringed asserted claims, either

literally or

under the doctrine of equivalents

such as to require a full trial?

2. Did the trial judge in the trial court error in adopting the report and recommendation of the Magistrate judge and dismissing Plaintiff's action on the merits and by

abusing its discretion in denying Plaintiff's motion for leave to supplement his responses with a test report

of his expert and/or in not granting Kaliardos' request for an oral hearing?

3. Did the Appeals Court error in affirming the District Courts dismissal of Plaintiff Appellant's case considering the evidence Kaliardos offered and the plain language and historical intent of the application of Federal Rule 56?

4. Is the Federal Judiciary using Rule 56 to rid their dockets of difficult cases and/or litigants and if so will such use of Rule 56 be allowed to continue?

PARTIES TO THE PROCEEDING
RULE 14.1(b)

All parties to the proceeding in the Court of Appeals for the Federal Circuit, whose judgement is sought to be reviewed, appear in the case caption and are:

Nicolas Kaliardos,
Plaintiff-Appellant-Petitioner

v.

General Motors Corporation,
Defendant-Appellee-Respondent,

BASF Corporation,
Defendant-Appellee-Respondent,

H.B. Fuller Company,
Defendant-Appellee-Respondent,

H.B. Fuller Automotive Products, Inc.
Defenant-Appellee-Respondent,
Jointly and Severally,

Daubert Industries, Inc.,
Defendant-Appellee-Respondent.

TABLE OF CONTENTS
Rule 14.1(c)

	Pg.
Questions Presented for Review	i
Parties to the Proceeding	iii
Table of Contents	iv
Table of Authorities	vii
Reference to Official and Unofficial Reports of Opinions Delivered	x
Precise Statement of the Grounds on which the Jurisdiction of the Supreme Court of the United States is Invoked	x
Constitutional Provisions, Treaties, Statutes, Ordinances and Regulations Involved	xiii
Statement of the Case	1
Nature of the Case and Proceedings Below	1
Summary Judgement	6
Statement of Facts	9

The Accused Coatings 10

BASF S51Z001 12

Daubert Nox-151 and Nox-170 13

H.B. Fuller WC-2291 and WC-2291-P 15

Performance Data 16

Appeal to Court of Appeals for the Federal Circuit 19

Arguement 22

The District Court Abused its Discretion in Adopting the Magistrates Recommendation 27

Because these are Genuine Issues of Material Facts, the Judgement of the District Court Should be Reversed 33

The District Court Abused its Discretion in Not Granting Kaliardos' Request for an Oral Hearing 42

Summary and Conclusion 45

Appendix

Order Accepting Magistrate Judge's October 7, 1993 Report and Recommendations 46

Affidavit of David W. Byrd 51

Decision, Court of Appeals For Federal Circuit 54

U.S. Patent No. 3,959,530 62

U.S. Patent No. 4,356,036 77

35 U.S.C. §271(a)(b)&(c) 96

Federal Rule of Civil Procedure 97
- Rule 11 97
- Rule 34 98
- Rule 36 99
- Rule 37 103
- Rule 56 108
- Rule 72(b) 111

Federal Rule of Evidence 702 113

Federal Magistrate Act Section 636(b) 116

Judgement, District Court 118

TABLE OF AUTHORITIES
Rule 14.1(c)

1. Daubert v. Merrell Dow Pharmaceuticals Inc., 27 USPQ2d 1200, (S.Ct. 1993).

2. Yenzer v. Agrotors, Inc., 22 USPQ 2d 1291, (D.C. M.D. Pa. 1991).

3. Vas-Cath Inc. v. Mahurkar, 19 USPQ2d 1111, (Fed. Cir. 1991).

4. C.R. Bard, Inc. v. Advanced Cardiovascular Systems, 911 F2d 670,673, 15 USPQ154d, 1542-43, (Fed. Cir. 1990).

5. Mathews v. Weber, 423 U.S. 261, 96 S. Ct. 549 (1976).

6. Anderson v. Liberty Lobby, Inc. et al., 477 U.S. 242, 106 S. Ct. 2505 (1986).

7. Lemelson v. TRW, Inc., 760 F2d 1254, 1260, 225 USPQ 697,700 (Fed. Cir. 1985).

8. Cornell v. Sears, Roebuck & Co., 722 F2d 1542, 1546, 220 USPQ 193,197 (Fed. Cir. 1983).

9. Federal Laboratories, Inc. v. Barringer Research Limited et al., 696 F2d 271, 217 USPQ 114 (Fed. Cir. 1982).

10. Landau v. J.D. Barter Construction Company, Inc., 657 F2d 158, 211 USPQ 861 (7th Cir. 1981).

11. Continental Paper Bag Co. v. Eastern Paper Bag Co., 210 U.S. 405 (1908).

12. Gould Inc. v. United States, 195 USPQ 112 (U.S. Ct. Cls., 1977).

13. Acme Highway Products Corp. v. D.S. Brown Co., 177 USPQ 130 (6th Cir. 1973).

14. Intel Corp. v. International Trade Commission, 20 USPQ 2d 1161 (Fed. Cir. 1161).

15. Grawer Tank & Mfg. Co., Inc. et al. v. Linde Air Products Co., 339 U.S. 605; 85 USPQ 328 (1950).

16. Kistner v. Califano, (CA 6 Ohio).

17. Dredge Corp. v. Penny, 338 F2d 456 (CA 9 1964).

CONCISE STATEMENT OF THE GROUNDS ON WHICH THE JURISDICTION OF THE SUPREME COURT OF THE UNITED STATES IS INVOKED RULE 14.1(e)

(i) The date of the entry of the judgement or decree sought to be reviewed is November 22, 1994.

(ii) There was no request for rehearing and therefore no order respecting a rehearing. An extension of time within which to file a petition for a writ of Certiorari was granted to and including 21 March 1995 on 24 February 1995.

(iii) There has been no cross petition for a writ of certiorari and therefore no express reliance on Rule 12.3.

(iv) The statutory provisions believed to confer on this Court jurisdiction to review the judgement for which application for writ of certiorari is made are as follows.

Jurisdiction in the United States Supreme Court is by writ of certiorari as indicated in the below quoted portions of Rule 10 of the Rules of the Supreme Court of the United States.

PART III. JURISDICTION ON WRIT OF CERTIORARI

Rule 10. Considerations Governing Review of Writ of Certiorari

1. A review on writ of certiorari is not a matter of right, but of judicial discretion. A petition for a writ of certiorari will be granted only when there are special and important reasons therefor. The following, while neither controlling nor fully measuring the Court's discretion, indicate the character of reasons that will be considered.

(a) When a United States court of appeals has rendered a decision in conflict with the decision of another United States court of appeals on the same matter, or has decided a federal question in a way in conflict with a state court of last resort; or has so far departed from the accepted and usual course of judicial proceedings, or sanctioned such a departure by a lower court, as to call for an excercise of this Court's power of supervision.

The Federal Court of Appeals For The Federal Circuit has "so far departed from the accepted and usual course of judicial proceedings, and/or sanctioned such a departure by the United States District Court for the Eastern District of Michigan, Southern Division, Detroit, as to call for an exercise of this Court's power of supervision."

Jurisdiction in the United States Supreme Court is further based on 28 USC 1254(1).

> (1) By writ of certiorari granted upon the petition of any party to any civil or criminal case, before or after rendition of judgement or decree.

THE CONSTITUTIONAL PROVISIONS, TREATIES, STATUTES, ORDINANCES AND REGULATIONS INVOLVED, RULE 14.1(f)

1. 35 U.S.C. §271(a)(b) & (c)

2. Federal Rules of Civil Procedure 11, 34, 36, 37, 56(e), and 72(b)

3. Federal Rules of Evidence 702

4. Federal Magistrate's Acts Section 636(b)

STATEMENT OF THE CASE
RULE 14.1(g)

Nature of the Case and Proceedings Below

This is an appeal from the decision of the U.S. District Court, Eastern District of Michigan, Southern Division which granted Appellees' Rule 56 Motions for Summary Judgement of Patent Non-Infringement and dismissed Appellant Kaliardos' suit against the Appellees, General Motors Corporation (General Motors), BASF Corporation (BASF), H.B. Fuller Company and H.B. Fuller Automotive Products, Inc. (Fuller), and Daubert Industries Inc. (Daubert). (A1,

The Complaint and Jury demand were filed on September 14, 1988.

The patents which are the subject of this appeal, U.S. 3,959,530 ('530 patent) and 4,356,036 ('036 patent) are for anti-corrosive coatings. (A3, ; A4)

The accused coatings were used by General Motors to prevent corrosion in its automobiles.

The coatings were supplied to General Motors by Appellees BASF, Fuller and Daubert.

Disputes During the Pre-Trial

During 5 1/2 years of pre-trial activity, there were a number of disputes regarding the compositions of the Appellees' coatings.

Daubert refused to produce samples of its coatings which were requested under Rule 34. Daubert promised to produce samples "in due course" in its response to a Rule 34 request, delayed until discovery ended, and then refused to supply samples.

More disputes centered on laboratory analyses of a BASF coating and coatings

taken from General Motors' vehicles. An initial analyses conducted by Kaliardos' experts showed that ingredients were in the coatings which were not disclosed in the documents which the Appellees produced to Kaliardos. General Motors and the other Appellees refused to accept the initial laboratory analyses and denied adding the disputed ingredients to their coatings.

Whether General Motors or the other Appellees added these disputed ingredients to the coatings used by General Motors is an issue of material fact.

The refusals of the Appellees to accept the initial laboratory analysis of the coatings caused Kaliardos to obtain a second analysis of the BASF coating by a second company. The analysis of the second company resulted in further disputes.

The Appellees examined the laboratories, copied records, deposed their chemists and filed motions to strike affidavits of the chemists which supported Kaliardos' responses to their summary judgement motions.

The Appellees' attacks on Kaliardos' evidence, motions and depositions produced a record which was difficult for a technically unskilled person to follow. As will be seen from the Magistrate's report and recommendation, the Magistrate had difficulty in understanding the evidence (A6,). The Magistrate's lack of expertise in laboratory analysis impacted heavily on Kaliardos.

Kaliardos made several attempts to obtain relief in the Court below without success. Kaliardos filed Rule 37 Motions to compel General Motors and BASF to produce documents and laboratory reports dis-

closing the compositions of the accused coatings. The motions were denied.

After an order was entered, Kaliardos filed objections to the Magistrate's order on the grounds that it was based on hearsay statements of an attorney
The Trial Court entered an Order accepting the Magistrate's Order.

In February, 1992, Kaliardos filed a Motion for the appointment of a special master. The Appellees opposed the motion and it was denied.

In April, 1992, Kaliardos terminated a deposition of his expert David W. Byrd (Byrd) which was taken pursuant to an order and moved for a protective order requesting that the Court limit the time and scope of the deposition. Kaliardos' motion for a protective order was denied.

On September 23, 1992, Kaliardos filed a motion for an order requiring Kaliardos and Appellees to conduct joint tests of samples taken from General Motors' vehicles. All of the Appellees opposed the motion and it was denied.

Summary Judgement

On January 30, 1990, General Motors and BASF filed a motion for summary judgement of non-infringement of Kaliardos' patents. On April 30, 1990 after Kaliardos filed his response, General Motors and BASF requested the Trial Court to defer action on the motion pending further discovery.

Over Kaliardos' objections, an order was entered which allowed the Appellees to depose Kaliardos' expert, Mr. Byrd, over a 2 1/2 year period, from December 19, 1989 to July 31, 1992. The transcript of the

deposition consists of 1481 pages in 12 volumes.

During the deposition, the Appellees' attorneys were successful in obtaining a ruling which prohibited Byrd during direct examination from qualifying answers and requiring him to respond to overtly broad questions with "Yes" or "No" answers.

The length of the deposition and the control which was exercised over Byrd's testimony during direct examination made his deposition of limited value. During the Magistrate's oral hearing on the summary judgement motions, Kaliardos made an oral motion to strike Byrd's deposition. The motion was denied.

On September 23, 1993, Magistrate Goldman struck the affidavit of Thurlow Geeck, a person with 44 years of experience in developing and manufacturing

coatings, and Exhibit "H" in Kaliardos' January 3, 1992 response. Mr. Geeck stated in his affidavit that some of Daubert's production records were false. Exhibit "H" was a collection of letters from companies which corrosion tested Kaliardos' coating. The letters referred to specific General Motors standards.

On January 3, 1994, Kaliardos filed motions for leave to file supplements to Kaliardos' responses to the Appellees' pending motions for summary judgement of non-infringement. When the motion was filed, the District Court had not acted on the Appellees' pending motions.

The subject matter of the supplements was a nine page test report of Kaliardos' expert Byrd. The test report supplemented Byrd's affidavits regarding the equivalence of the ingredients of the accused coatings

to the ingredients in the claims of Kaliardos' patents. The test report corroborated Byrd's affidavits. The District Court denied the motion (3/31/94 Order).

Kaliardos requested an oral hearing on his objections to the Magistrate's Report and Recommendation. The request was not granted.

STATEMENT OF FACTS

The Automobile Corrosion Problem

During the 1960's and 1970's vehicle corrosion was a serious problem, particularly in cold weather states. It was estimated in 1975 that rusted-out vehicles cost motorists 5 billion dollars in 1968 and 7.5 billion dollars in 1975.

The Kaliardos Patents

U.S. 3,959,530. The subject of U.S. 3,959,530 is a wax-type protective coating. The coating is described in the

specification in terms of commercially available ingredients.

U.S. 4,356,036 is an improvement of U.S. 3,959,530. The coating is described in the specification in terms of commercially available ingredients. Claim 1 which is representative of the claimed invention is drawn to a mixture of 8 ingredients.

The Accused Coatings

BASF, Daubert and H.B. Fuller supplied General Motors with the accused wax type anti-corrosion coatings. General Motors admits that the coatings met the requirements of General Motors material specifications GM 998-1128 and 998-2150 but denies knowing the exact chemical compositions of the BASF, Daubert and H.B. Fuller coatings.

The chemical compositions of the BASF, Daubert and H.B. Fuiler coatings are dis-

puted issues of fact.

Analyses of coatings taken from six General Motors' vehicles (1983 Cavalier, 1983 Olds Cierra, 1984 Buick Skyhawk, 1987 Celebrity, 1988 Olds Delta and 1991 Pontiac Grand Prix) show that ingredients were used which BASF, Daubert and H.B. Fuller deny useing in their coatings. The 1983 Cavalier, 1984 Olds Cierra and 1984 Buick Skyhawk were examined by an expert who determined that the doors from which the coatings were taken and the coatings themselves were original equipment.

Analyses of a liquid BASF coating and two liquid H.B. Fuller coatings also show that ingredients were used which BASF and H.B. Fuller deny using. The disputed ingredients are material to Kaliardos' claims of infringement.

The requirements of General Motors

two specifications are very similar. GM 998-1128 requires alumunim paste. GM 998-2150 neither requires nor prohibits aluminum paste. General Motors alleges that the aluminum paste was added to make the coating visible. The GM 998-2150 specification requires the coating to be "visible under normal production lighting". This permits a supplier to decide which material to add to meet the visible requirement.

BASF, Daubert and H.B. Fuller supplied the coatings to General Motors under the following designations:

Appellee	GM 998-1128	GM 998-2150
BASF	S51Z001	N.A.
Daubert	NOX-151	NOX-170
H.B. Fuller	N.A.	WC-2251 & WC-2251-P

BASF S51Z001

BASF alleges that, except for minor

changes, BASF and its predecessors sold the same coating to General Motors from 1953 to 1987. In 1987 BASF discontinued making the coating.

The following table compares the compositions of BASF's 1976 and 1985 S51Z001 Safety Data Sheets (MSDS).

1976	1985
1. Aluminum	1. Aluminum
2. Petroleum Hydro-Carbon Resin	2. Hydrocarbon Resin
3. Microscrystalline Wax	3. Microcrystalline Wax
4. VM & Naphtha	4. VM & Naphtha
5. -	5. Stearic Acid
6. -	6. P.P. Methyl Diamine
7. Mineral Spirits	7. Mineral Spirits

Daubert NOX-151 and NOX-170

Daubert admits it sold its X-151

coating to General Motors from 1979 to 1986 and its X-170 from June, 1984 to the present. Daubert used code numbers in its production records to identify the ingredients. After promising in a response to a Rule 34 request to provide samples, Daubert refused to supply Kaliardos with samples.

The compositions of Daubert's coating are disputed issues of fact.

The following table compares Daubert's NOX-151 and NOX-170 Material Safety Data Sheets.

NOX-151	NOX-170
1. Aluminum Pigment	1. Aluminum Pigment
2. Thermoplastic Hydrocarbon Resin	2. Hydrocarbon
3. Microcrystalline Wax	3. Petroleum Wax
4. VM & Naphtha	4. VM & Naphtha

5. Lead Sulfonates	5. Barium Sulfonates
6. Silica	6. Petroleum Oil (Severely solvent refined and/or severaly hydrogenated)

General Motors identified Daubert as the supplier of the coating taken from the 1984 Buick Skyhawk.

H.B. Fuller WC-2291 and WC-2291-P

H.B. Fuller began supplying WC 2291 and WC 2291-P coatings to General Motors on August 19, 1988. H.B. Fuller also used code numbers in its production records to identify the ingredients of its coatings. H.B. Fuller denies making coatings containing the disputed ingredients. Samples of H.B. Fuller coatings were tested by Kaliardos' experts and failed to pass GM 998-2150 corrosion tests.

Fuller's WC-2291 and WC-2291-P MSDS are compared in the following table.

WC-2291	WC-2291-P
1. Aliphatic Hydrocarbon Resin	1. Aliphatic Resin
2. Microcrystalline Wax	2. Microcrystalline Wax
3. Parafinic Wax	3. Parafinic Wax
4. VM & Naphtha	4. VM & Naphtha
5. Calcium Sulfonate	5. Calcium Sulfonate
6. Mineral Spirits	6. Mineral Spirits
7. Aliphatic Oil (Hydro treated)	7. Aliphatic Oil (Severely hydrogenated)

Performance Data

BASF, Daubert and H.B. Fuller have admitted that the coatings which they supplied to General Motors met the requirements of General Motors specifications GM 998-1128 and GM 998-2150. The performance data of Kaliardos' coating

which is disclosed in his '036 patent shows that his coating produces substantially the same results. The performance data in the '036 patent is compared to the requirements of GM 998-1128 and GM 998-2150 in the following chart.

The Magistrate's report and recommendation contains the errors of material facts and conclusions which lack support in the record. The Magistrate failed to believe all of Kaliardos' evidence and to draw all justifiable inferences in Kaliardos' favor. It is clear from the Magistrate's report that he lacked an understanding of chemical laboratory analyses. The Magistrate misinterpreted the meaning of "not detected" in the reports as representing "not present". The Magistrate didn't understand that several methods may have to be employed to

determine an ingredient is present. The District Court was informed of this in the Objections and supplement which Kaliardos filed. Attached to the Objections was a compilation of documents which support Kaliardos' claims of infringement against the Appellees.

COATING PERFORMANCE, KALIARDOS V. GENERAL MOTORS

Requirement	U.S. 4,356,036	GM 998-1128	GM 998-2150
Flash Point	53 °F	53 °F	53 °F
Sprayability	No sag	No sag	No sag
High Temperature Flow Point	up to 200 °F	up to 200 °F	up to 200 °F
Toxicity	None	None	None
Viscosity (Fisher #2 Cup)	12-15 Sec.	12-15 Sec.	12-15 Sec.
Salt Spray	360 Hours	336 Hours	500 Hours
Salt Solution Immersion	7 days	7 days	7 days
Detergent Solution Immersion	7 days	7 days	7 days
Environmental Corrosion Bare Steel	10 cycles	10 cycles	10 cycles
Humidity Resistance	500 Hours	500 Hours	500 Hours
Cold Impact	2.8 joules	2.8 joules	2.8 joules

Appeal to Court of Appeals for the Federal Circuit

Kaliardos appealed the District Court's Granting of Defendant-Appellee's Summary Judgement motion to the Court of Appeals for the Federal Circuit in timely fashion.

The basis for federal jurisdiction in the court of first instance, the United States District Court, Eastern District of Michigan, Southern Division, is as alleged in the District Court case No. 88-CV-73729-DT and is based on 28 U.S.C. 1338(a).

> "(a) The district courts shall have original jurisdiction of any civil action arising under any Act of Congress relating to patents, plant variety protection, copyrights and trademarks. Such jurisdiction shall be exclusive of the courts of the states in patent, plant variety protection and copyright cases."

The Court of Appeals for the Fed-

eral Circuit, disregarded Kaliardos' many showings of genuine issues as to material fact as discussed above which should be tried to a jury. Further, the Court of appeals disregarded Kaliardos' assertions that the court abused its discretion in denying his motion for leave to supplement his summary judgement responses with a test report of his expert and in not granting his request for an oral hearing before deciding the motion for summary judgement.

In essense, the Court of Appeals rubber stamped the holdings of the trial court which rubber stamped the findings of the magistrate judge who at best was confused by the subject matter of the trial by his own admission

tinate [illegible] Court of Ap-

The ultimate acceptance by the Court of appeals of a confused magistrate judge's recommendations leading to the dismissal of plaintiff appellant's case has caused Kaliardos to request a Writ of Certiorari from the Supreme Court in an effort to obtain justice for himself and others who find themselves prevented from seeking justice from a jury of their peers by over-broad application of Rule 56 used to clear the court's docket of difficult cases and/or litigants.

It is time for the Supreme Court to look into this matter and in so doing perhaps give Kaliardos his full day in court, i.e. a trial on the merits of his inventions.

ARGUMENT
RULE 14.1(j)

The District Court's Summary Judgement and the Court of Appeals for the Federal Circuit's affirmation of the judgement must be reviewed and reversed because there are genuine issues for trial.

The issue below is whether Kaliardos has presented sufficient facts to show that there are genuine issues requiring trial; F.R.C.P. 56(e). That issue is here also, along with broader and deeper issues which make the case exceptional and a prime candidate for review by the Supreme Court of the United States. These issues are whether Federal Rule 56 is being properly utilized by the lower courts or is Federal Rule 56 being utilized to rid the federal courts of difficult cases and/or diffi-

cult plaintiffs. Is Federal Rule 56 being utilized by the industrial complex to deprive small independent inventors of the fruits of their labor.

In reviewing Kaliardos' evidence, the Federal Circuit should have accepted all of his evidence as being true, should have drawn justifiable inferences in his favor and not made determinations of credibility. The Federal Circuit has pointed out that patent suits involve complex factual issues requiring the testimonies of experts.

BASF, Daubert and H.B. Fuller admitted they supplied the accused coatings and General Motors has admitted that it used the coatings in its vehicle doors. Therefore, the only matter to be decided is whether Kaliardos has presented sufficient facts requiring a trial on his claims of infringement.

Kaliardos has provided detailed claim analyses. His evidence shows that the coatings covered by his patents meet the requirements of General Motors specification 998-1128 and 998-2150. BASF, Daubert and H.B. Fuller admit that their coatings also meet the requirements of the General Motors standards. Therefore, Kaliardos' coatings produced the same results as the Appellee's coatings.

Kaliardos' affidavits show that his coatings were developed to meet General Motors specifications. The Appellees have admitted that their coatings were developed for this purpose. Kaliardos' affidavits show which ingredients are needed to meet the requirements of the specification.

Under the guidelines, the Federal Circuit should have accepted this evi-

dence as being true. By the court's own statement, the doctrine of equivalents is not a prisoner of a formula. In determining equivalence, all of the evidence must be considered, including the purposes of elements and whether a person skilled in the art would consider elements to be interchangeable.

Kaliardos' responses include detailed claim analyses which support his claims of infringement against the Appellees. His responses are supported by the affidavits of Kaliardos and experts and documents.

The District Court abused its discretion in denying Kaliardos' motion for leave to supplement his responses with the test report of his expert, Byrd. Mr. Byrd's test report was relevant evidence which would have been admissable at the

time of trial. Although affidavits are the most common evidence in opposition to motions for summary judgement, there is no reason to exclude evidence which would be admissable during a trial. Rule 702 F.R.Ev. was enacted to assist the trier of fact to understand the evidence and determine a fact in issue. "Nothing in the text of this rule establishes 'general acceptance' as an absolute prerequisite to admissability."; Daubert v. Merrell Dow Pharmaceuticals Inc., 27 USPQ2d 1200, (S.Ct. 1993). Byrd's affidavits clearly showed that he was competent to perform the tests.

The District Court abused its discretion in not granting Kaliardos' request for an oral hearing. During the 5 1/2 years in the District Court, only two oral hearings were held in the District Court. The District Court acted

on the record without the benefit of expert testimony; Yenzer v Agrotors Inc., 22 USPQ2d 1291 (D.C. M.D. Pa. 1991). An oral hearing after the Magistrate's Report and Recommendation would have permitted Kaliardos the opportunity to explain the evidence which the Magistrate misconstrued as being "muddled and difficult to comprehend" before the District Court acted on the motions for summary judgement.

THE DISTRICT COURT ABUSED ITS DISCRETION IN ADOPTING THE MAGISTRATE'S RECOMMENDATION

The Federal Circuit has made it clear that in reviewing a grant of summary judgement of a district court, the Federal Circuit is not bound by the holding of a district court that no material facts are in dispute, and must make an independent determination as to whether the standards for summary judgement have

been met. Vas-Cath Inc. v Mahurkar, 19 USPQ2d 1111 (Fed. Cir. 1991); C.R. Bard, Inc. v. Advanced Cardiovascular Systems, 911 F2d 670, 673, 15 USPQ2d 1540, 1542-43 (Fed. Cir. 1990).

The protracted proceedings in the District Court created a difficult record for the District Court. The long period for filing dispositive motions and the 2 1/2 year deposition of the Kaliardos expert permitted the Appellees' skilled attorneys to confuse the District Court by their attacks on Kaliardos' evidence.

The guidelines for de novo review would have enabled the District Court to decide whether summary judgement is appropriate. The main issue on this appeal is whether there are disputed issues of material facts which would preclude the granting of the Appellees' motions for

summary judgement.

After Kaliardos filed his objections to the Magistrate's Report and Recommendation, under Section 72(b) of the Federal Rules of Civil Procedure, the District Court was required to conduct a de novo review of the evidence. The Supreme Court has said that although Section 636(b) of the Federal Magistrate's Act was enacted to "establish a system capable of increasing the overall efficiency of the Federal judiciary...Congress also intended the district judge to retain ultimate responsibility for decision making."; Mathews v Weber, 423 U.S. 261, 96 S.Ct. 549 (1976).

The evidence showed that there were genuine issues for trial. By accepting the Magistrate's Report and Recommendation, the District Court abused its discretion.

In deciding a motion for summary judgement "credibility determinations, the weighing of evidence, and the drawing of inferences from the facts are jury functions, not those of a judge, whether he is ruling on a motion for summary judgement or for a directed verdict. The evidence of the non-movant is to be believed, and all justifiable inferences are to be drawn in his favor." Anderson v. Liberty Lobby, Inc. et al., 477 US 242, 106 S.Ct. 2505 (1986); Lemelson v. TRW Inc., 760 F2d 1254, 1260. 225 USPQ 697, 700 (Fed. Cir. 1985); Connell v. Sears, Roebuck & Co., 722 F2d 1542, 1546, 220 USPQ 193, 197 (Fed. Cir. 1983); a court may not resolve "disputed and relevant factual issues on conflicting affidavits of qualified experts, (citations omitted). Nor is it at liberty to disbelieve the good faith statements of

experts contained in depositions or affidavits and presented by the non-moving party." (citations omitted). Federal Laboratories, Inc. v. Barringer Research Limited et al., 696 F2d 271; 217 USPQ 114 (Fed. Cir. 1982); "Although Federal Rules of Civil Procedure do not limit or forbid use of summary judgement procedures in patent cases, courts should exercise great caution before granting such motion in infringement action; patent cases in particular tend to involve complex issues that are not properly resolved without aid of expert testimony."; Landau v. J.D. Barter Construction Company, Inc. 657 F2d 158, 211 USPQ 861 (7th Cir. 1981).

The summary judgement motions of General Motors required Kaliardos "to set forth specific facts showing that there is a genuine issue for trial"; F.R.C.P. 56(e). Kaliardos claimed that the Appel-

lees were liable jointly and severally for infringing his patents.

The District Court abused its discretion in denying Kaliardos' motion for leave to supplement his responses on the ground it was not supported by an affidavit. The subject of the motion was a test report by Kaliardos' expert which supported Kaliardos' evidence of equivalence.

Although Fed.R.Civ.P. 56(e) requires supporting affidavits to be made on personal knowledge, the Rule does not restrict evidence of the non-movant to affidavits. Moreover, "While it is clear that a summary judgement may be rendered solely on the basis of affidavits, affidavits are, as a general proposition, the least trustworthy basis, since the affiant has not been subject to cross examination and his demeanor is not observable."

Moore's 1992 Federal Rules Pamphlet, Part 1, pg. 56.

Because there are Genuine Issues of Material Facts, the Judgement of the District Court Should Be Reversed

An infringement of a patent is an infringement of its claims. "Claims measure the invention and determine whether there is infringement."; Continental Paper Bag Co. v. Eastern Paper Bag Co., 210 US 405 (1908). "Each claim of a patent is a separate and distinct invention." Gould, Inc. v United States, 195 USPQ 112, (US Ct Cls, 1977). Proof of infringement of a single claim is sufficient to establish infringement of the patent.

Claims may be infringed in one of two ways. If, by comparing the words of a claim with an accused device, it is shown that the accused device is clearly within the claim, a case of literal infringement

exists. Acme Highway Products Corp. v D.S. Brown Co., 177 USPQ 130 (6th Cir. 1973).

The second test is the application of the doctrine of equivalents. "A finding of equivalence is a determination of fact. Proof can be made in any form: through the testimony of experts or others versed in the technology; by documents, including texts and treatises; and of course, by the disclosure of the prior art. Like any other issue of fact final determination requires a balancing of credibility, persuasiveness and weight of evidence." Intel Corp. v. International Trade Commission, 20 USPQ 2d 1161 (Fed. Cir. 1161).

"What constitutes equivalency must be determined against the context of the patent, the prior art, and the particular circumstances of the case."

Graver Tank & Mfg. Co., Inc., et al. v. Linde Air Products Co., 339 U.S. 605; 85 USPQ 328 (1950).

"Equivalence, in the patent law, is not the prisoner of a formula and is not an absolute to be considered in a vacuum ...It does not require complete identity for every purpose and in every respect... Consideration must be given to the purpose for which an ingredient is used in a patent, the qualities it has when combined with the other ingredients, and the function which it is intended to perform. An important factor is whether persons reasonably skilled in the art would have known of the interchangeability of an ingredient not contained in the patent with one that was." Graver Tank, supra.

Under §271(b) of the Patent Statute, a party may be liable as a contributory

infringer if the party sells a material component of a patented invention with knowledge that such component has been made for use in an infringement of the invention.

BASF

Kaliardos' January 3, 1992, response to the joint General Motors and BASF motion for summary judgement sets forth specific facts showing there is a genuine issue for trial on Kaliardos' claim of infringement against BASF. The response is supported by affidavits of Kaliardos and his expert Byrd. Byrd's affidavit is supported by test data, documents, technical articles, and the basis of his finding of equivalence between the ingredients of the BASF coating and the ingredients of claim 1 of the patents. Kaliardos' affidavit identifies the purposes

of the ingredients of the claims. The January, 1992 response is supported by the October, 1992 supplement and the '036 patent which shows that Kaliardos' coating produces the same results as the BASF coating. Kaliardos' claim of infringement is further supported by the deposition testimony of Byrd.

the January, 1-94 test report which the District Court refused to admit and the affidavits of Daryl Strandberg, Dr. Paul Epstein, Dr. James Johnson and Dr. Peter Warner.

Daubert

Kaliardos' December 20, 1991 response to the Daubert motion for summary judgement and Daubert's acts provide specific facts showing there are genuine issues for trial on Kaliardos' claim of infringement against Daubert. The res-

ponse is supported by affidavits of Kaliardos and his expert Byrd. The mistake of the lab technician which resulted in a Pontiac Grand Prix door to be incorrectly identified in the December, 1991 response as a Cadillac Eldorado door does not invalidate the lab analysis of the coating which was taken from the interior of the door. Kaliardos' response and supplement of October, 1992 are supported by exhibits and affidavits, Kaliardos' disclosures in affidavits of the purpose of the ingredients of his coatings, and deposition testimony of Byrd.

Daubert's failure to come forward with evidence to rebut the presumptions of infringement resulting from its refusal to supply samples of its coatings, its opposition to the appointment of a

Special Master, its opposition to joint tests of coatings and its opposition to have Kaliardos take the deposition of its employees provide further evidence of infringement. Kaliardos' evidence is supplemented by the deposition testimony of Byrd and the January, 1994 test report which the District Court refused to admit.

H.B. Fuller

Kaliardos' January 3, 1992, response to the H.B. Fuller motion for summary judgement and H.B. Fuller's acts provide specific facts showing there is a genuine issue for trial on Kaliardos' claim of infringement against H.B. Fuller. The response is supported by affidavits of Kaliardos and his expert Byrd and the October, 1992 supplement. The failures of the H.B.

Fuller coatings to meet the corrosion test requirements of General Motors 998-2150 raises a presumption that H.B. Fuller has withheld evidence tending to prove infringement. The deposition testimony of Byrd

and the January, 1994 test report which the District Court refused to admit supplies further evidence to support Kaliardos' claim of infringement.

H.B. Fuller's opposition to the appointment of a Special Master, its opposition to joint tests of coatings raise presumptions of infringement.

General Motors

General Motors' failure to come forward with evidence to rebut the presumptions caused by its opposition to the appointment of a Special Master and its opposition to joint tests of coatings

in its vehicles raises a presumption of infringement.

There is an issue of material fact as to which of Appellees added the disputed ingredients to the coating. The deposition testimony of Byrd that there was a statement with the BASF coating which says that "Mr. Ethington sampled this from a production line. That's all I recall.", raises a presumption that General Motors added the disputed ingredients.

This would make General Motors liable as a direct infringer under 35 U.S.C. §271(a) and expose the other Appellees to liability as contributory infringers under 35 U.S.C. §271(c). General Motors could also be found liable under 35 U.S.C. §271(b) as an infringer by inducement.

The District Court Abused Its Discretion In Not Granting Kaliardos' Request for an Oral Hearing

During the 5 and 1/2 years of the pre-trial, there were only two oral hearings before Judge Gadola. The issues in this case were complex. Kaliardos had filed objections which identified numerous problems with the Magistrate's report.

Three motions of Kaliardos were pending. Two of the motions were Rule 11 motions. Kaliardos requested that the Court defer acting on the summary judgement motions until it ruled on Kaliardos' Rule 11 motions. The Rule 11 motions were direct attacks on the credibility of the Appellees. A resolution of the Rule 11 motions may have affected the pending summary judgement motions.

Kaliardos had waited five years in

the District Court to bring his case before a jury. The extension of time to file dispositive motions, which he opposed, substantially delayed the litigation and burdened him financially.

Although some appeal courts have upheld refusals of trial courts to grant oral hearings, where issues have been complex, failures to grant oral hearings have been found to be unacceptable.

In Kistner v. Califano (CA6 Ohio) the appeals courts vacated a summary judgement where local rules allowed for elimination of oral hearings. In Dredge Corp. v. Penny, 338 F2d 456 (CA9 1964) the Court said that Rule 56 appears to contemplate that a hearing will be held before a motion for summary judgement is acted on.

Summary and Conclusion

Thus, Kaliardos provided ample evidence to the Magistrate Judge, the District Court and the Court of Appeals to establish his absolute right to a jury trial. Genuine issues of material fact with respect to each of the defendant-appellees below have been discussed above.

The fact that a Magistrate Judge, not knowledgable in the highly technical subject matter has been confused and lead astray by Defendant-Appellees Respondant's council and wrongly recommended granting of their summary motions high lights the danger in the over zeleous use of Rule 56 motions, especially in complex patent cases by the lower federal courts in recent years.

The acceptance of the Magistrate's

recommendation by the Trial Court without the aid of a master and the affirmance of the trial court's decision to dismiss Kaliardos' case by the Court of Appeals in view of the evidence discussed above and the plain requirements of Rule 56 certainly gives rise to the question; Is Rule 56 being used to clean the Federal Court system of difficult cases and/or litigants not all of who have the finances and tenacity to bring the question to this court.

This question is ripe for consideration. This case is an excellent vehicle for such consideration. The struggling independant inventors faced with extremely difficult litigation against corporate america require this court's help in such consideration.

The granting of the requested Writ of Certiorari is therefore prayed for.

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF MICHIGAN
SOUTHERN DIVISION

NICOLAS KALIARDOS,

Plaintiff,

v.

GENERAL MOTORS CORPORATION, BASF CORPORATION, DAUBERT INDUSTRIES, INC., H.B. FULLER COMPANY, and H.B. FULLER AUTOMOTIVE PRODUCT, INC., jointly and severally,

Defendants.

_____/

Civil Action No. 88-73729

HONORABLE PAUL V. GADOLA
U.S. DISTRICT JUDGE

ORDER ACCEPTING MAGISTRATE JUDGE'S OCTOBER 7, 1993 REPORT AND RECOMMENDATION

The court, pursuant to 28 U.S.C. §636(b)(1)(B), Fed. R. Civ. P. 72(b), and LR 72.1(d)(2) (E.D. Mich. Jan. 1, 1992), has reviewed the magistrate judge's October 7, 1993 report and recommendation as well as plaintiff's objections. After conducting a de novo

review, the court accepts the magistrate judge's report and recommendation as the court's findings and conclusions.

Therefore, it is hereby ORDERED that the magistrate judge's October 7, 1993 report and recommendation is ADOPTED.

It is further ordered that the motion for summary judgement of defendants General Motors Corporation and BASF Corporation is GRANTED.

It is further ORDERED that defendant Daubert Industries, Inc.' motion for summary judgement is granted.

It is further ORDERED that the motion for summary judgement of defendants H.B. Fuller and H.B. Fuller Automotive Products, Inc. is GRANTED;

a judgement in accordance with this order shall be entered.

SO ORDERED.

Dated: 3/30/94

(signed)
PAUL V. GADOLA
UNITED STATES DISTRICT
JUDGE

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF MICHIGAN
SOUTHERN DIVISION

NICOLAS KALIARDOS,

Plaintiff,

vs.

GENERAL MOTORS CORPORATION, BASF CORPORATION, DAUBERT INDUSTRIES, INC., H.B. FULLER COMPANY, NATIONAL STARCH & CHEMICAL CORPORATION, and BEAZER EAST, INC., jointly and severally,

Defendants.
_____/

Civil Action
Case No.
88-CV-73729-DT

Hon. Paul J.
Gadola

AFFIDAVIT OF DAVID W. BYRD

State of Michigan)
) SS:
COUNTY OF OAKLAND)

David W. Byrd, being duly sworn, deposes and says:

1. That I have an M.S. degree in Biological Science, Wayne State University, post graduate credits in chemistry, and am a member in good standing of The

American Chemical Society, ANACHEM and the Chromatography Society.

2. That I am the owner of Absolute Analytical Laboratory, 1030-D Crooks Road, Clawson, Michigan, which is in the business of trace organic and inorganic chemical analyses of materials.

3. That from December, 1987 to the present, I conducted laboratory analyses at the Absolute Analytical Laboratory of samples of a BASF anti-corrosion coating and scrapings of this coating taken from General Motors' vehicles.

4. That I reviewed BASF and General Motors documents, technical literature and deposition testimonies of BASF and General Motors employees relating to the BASF S51Z001 coating.

5. That I also reviewed U.S. Patents Nos. 3,959,530 and 4,356,036, including the specifications and claims.

6. That after reviewing the above information, it is my opinion that the BASF anti-corrosion coating contains all of the ingredients or well known equivalents of the ingredients specified in claim 1 of U.S. Patent No. 3,959,530 and claim 1 of U.S. Patent No. 4,356,036.

Further deponent sayeth not.

David W. Byrd

Subscribed and sworn to
before me this 2nd
day of January, 1992

UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

94-1265

NICOLAS KALIARDOS,

Plaintiff-Appellant,

v.

GENERAL MOTORS CORPORATION, BASF CORPORATION, H.B. FULLER COMPANY, and H.B. FULLER AUTOMOTIVE PRODUCTS, INC., jointly and severally,

Defendants-Appellees,

and

DAUBERT INDUSTRIES, INC.,

Defendant-Appellee.

DECIDED: November 22, 1994

Before LOURIE, Circuit Judge, COWEN, Senior Circuit Judge, and CLEVENGER, Circuit Judge.

LOURIE, Circuit Judge.

DECISION

Nicolas Kaliardos appeals from a decision of the United States District Court for the Eastern District of Michi-

gan granting summary judgement of non-infringement in favor of General Motors Corporation, BASF Corporation, H.B. Fuller Company, H.B. Fuller Automotive Products, Incorporated, and Daubert Industries, Incorporated. Kaliardos v. General Motors Corp., Civ. No. 88-73729 (E.D. Mich. Mar. 30, 1994). Because we conclude there is no genuine issue as to any material fact and the defendants are entitled to judgement as a matter of law, we affirm.

DISCUSSION

On September 14, 1988, Kaliardos filed an action claiming infringement of certain claims of United States Patents 3,959,530 and 4,356,036 by General Motors and three of its suppliers of anti-corrosive automobile coatings. Kaliardos claimed that the defendants infringed the '530 patent under the doctrine of equivalents, and infringed the '036 patent

literally and under the doctrine of equivalents.* In 1991, after lengthy discovery, the defendants filed motions for summary judgement of non-infringement.

On October 7, 1993, the magistrate judge reported that the evidence produced did not create a genuine issue of material fact concerning whether the accused products infringed the asserted claims, either literally or under the doctrine of equivalents. Accordingly, the magistrate judge recommended entry of summary judge-

---

* Kaliardos alleged that BASF literally infringed claims 1, 2, and 7 of the '036 patent, and infringed claims 1-6 of the '036 patent and claims 1 and 2 of the '530 patent under the doctrine of equivalents; that Daubert literally infringed claims 1, 5, and 6 of the '036 patent, and infringed claims 1-6 of the '036 patent and claims 1 and 2 of the '530 patent under the doctrine of equivalents; and that Fuller infringed claims 1 and 2 of the '530 patent under the doctrine of equivalents. Kaliardos aslo asserted claims against General Motors.

ment in favor of the defendants. The district court judge adopted the report and recommendation of the magistrate, granted the defendants' motions for summary judgement, and dismissed Kaliardos' action on the merits. Kaliardos now appeals.

Summary judgement is appropriate if there is no genuine issue as to any material fact and the moving party is entitled to a judgement as a matter of law. Fed. R. Civ. P. 56(c). If a party fails to make a showing sufficient to establish the existence of an element essential to that party's case, summary judgement should be granted against that party. Celotex Corp. v. Catrett, 477 U.S. 317, 322 (1986). The burden is initially on the moving party to show that there is an absence of evidence to support the non-moving party's case. Id. at

323. The burden then shifts to the non-moving party to designate specific facts showing that there is a genuine issue for trial. Id. at 324. In reviewing a grant of summary judgement, we must make an independent determination as to whether the standards for summary judgement have been met. C.R. Bard, Inc. v. Advanced Cardiovascular Sts., 911 F.2d 670, 673, 15 USPQ2d 1540, 1542-43 (Fed. Cir. 1990).

Claim 1 of each patent is representative of the claims asserted against the defendants. Claim 1 of the '530 patent reads:

> A cleaning and protective coating composition consisting essentially of a mixture of wax residue such as paraffin and microcrystalline wax, perchlorethylene (sic), petroleum distillate having a boiling point ranging between 350 (degrees) and 380 (degrees) F., and a nonionic surfactant such as nonylphenoxpoly (ethyleneoxy) ethanol and a small amount of (N,N,N',N'-tetrakis (2-hydroxypropyl) ethylenediamine)).

Claim 1 of the '036 patent reads:

> An anti-corrosion coating comprising a mixture of aluminum paste or zinc paste containing aluminum or zinc flakes and a solvent, microcrystalline wax, aromatic hydrocarbon resin having a softening point, R and B, of 70 (degrees) C. - 140 (degrees) C., chlorinated rubber having a combined chlorine content of at least 66%, neutral barium sulfonate, chlorinated solvent, aromatic hydrocarbon solvent and mineral spirits.

Kaliardos asserts that the court erred in granting summary judgement because he presented sufficient evidence to show there are genuine issues requiring trial. However, the evidence adduced does not establish that each of the elements of the asserted claims is present in the accused coatings. For example, the evidence does not show the presence of neutral barium sulfonate in the BASF coatings or the presence of chlorinated solvent or chlorinated rubber in the Daubert coatings. Furthermore, there is

a lack of evidence that the accused coatings infringe the patents under the function-way-result test of the doctrine of equivalents. Moreover, there were inadequate assertions of the presence of equivalents of neutral barium sulfonate, a nonionic surfactant such as nonylphenoxypoly (ethyleneoxy) ethanol, and the specific ethylenediamine required by the claims. We thus agree that there were no genuine issues of material fact concerning infringement and that the court did not err in granting summary judgement of non-infringement.

Kaliardos also asserts that the court abused its discretion in denying his motion for leave to supplement his responses with a test report of his expert. The court denied Kaliardos' motion on the basis that the report was untimely and unverified. Kaliardos has

not established that the court abused its discretion in not admitting the test report in question.

Furthermore, Kaliardos asserts that the court abused its discretion in not granting his request for an oral hearing before deciding the motion for summary judgement. However, the court properly relied on the record developed by the magistrate and was not required to conduct an oral hearing in addition to that conducted by the magistrate.

Finally, the defendants each request an award of attorney fees and costs against Kaliardos. We decline to award fees and costs in this case because we believe the appeal was undertaken conscientiously.

United States Patent [19]

Kaliardos [11] **3,959,530**

[45] **May 25, 1976**

---

[54] **CLEANING AND PROTECTIVE COATING COMPOSITION AND METHOD**

[76] Inventor: **Nicolas Kaliardos**, 10725 Morang Ave., Detroit, Mich. 48224

[22] Filed: **Sept. 20, 1974**

[21] Appl. No.: **507,851**

Related U.S. Application Data

[63] Continuation-in-part of Ser. No. 319,851, Dec. 29, 1972, abandoned.

[52] **U.S. Cl.** **427/341**; 106/3; 106/4; 106/5; 106/6; 106/7; 106/8; 106/9; 106/10; 106/11; 427/154; 427/155; 427/156

[51] **Int. Cl.²** **B05D 3/10**; C09G 1/08

[58] **Field of Search** 106/3–11; 117/62, 168; 427/154–156, 341

[56] **References Cited**

UNITED STATES PATENTS

2,884,329	4/1959	Jezl	106/10
3,365,312	1/1968	Nowack	106/3
3,582,366	6/1971	Brieger	106/10

OTHER PUBLICATIONS

Chemical Dictionary, 1961, p. 465.

Chemical Abstract, 66: 19.976g.

Primary Examiner—Ronald H. Smith
Assistant Examiner—Janyce A. Bell
Attorney, Agent, or Firm—Barnes, Kisselle, Raisch & Choate

[57] ABSTRACT

A waxing and protective coating composition embodying the invention comprises a mixture of wax residue such as paraffin and microcrystalline wax, chlorinated solvent, petroleum distillate, and a nonionic surfactant such as nonylphenoxypoly-(ethyleneoxy)ethanol and a small amount of [N,N,N',N'-tetrakis (2-hydroxypropyl)ethylenediamine].

6 Claims, No Drawings

CLEANING AND PROTECTIVE COATING COMPOSITION AND METHOD

This patent application is a continuation-in-part of my application Ser. No. 319,851, filed Dec. 29, 1972, now abandoned.

This invention relates to cleaning and protective coating compositions and to a method for protecting the finishes of articles and particularly the finishes of automobiles.

BACKGROUND OF THE INVENTION

In protecting the finishes of articles such as paint finishes, chrome plating, glass, and the like, it is common to utilize separate cleaning and waxing compositions. Such separate compositions require individual steps of application, removal and buffing or smoothing.

Among the objects of the present invention are to provide a composition for cleaning and protectively coating finishes such as those of automobiles and a method of applying such composition which requires a minimum of labor, which has rust inhibiting properties; which obviates the need for extensive rubbing or buffing; which protects the surface for a long period of time against atmospheric conditions; and which minimizes the cost of both the composition and labor involved.

DESCRIPTION

Basically, the waxing and protective coating composition embodying the invention comprises a mixture of wax residue such as paraffin and microcrystalline wax, chlorinated solvent, petroleum distillate, and a nonionic surfactant such as nonylphenoxypoly(ethyleneoxy)ethanol and a small amount of [N,N,N',N'-tetrakis(2-hydroxypropyl) ethylenediamine].

The wax residue is preferably a mixture of paraffin and microcrystalline waxes. The terms paraffin wax and microcrystalline wax are well understood in the wax art. A typical paraffin wax is of the type made by Shell Chemical Company and sold under the trademark SHELLWAX 100 having the following properties:

	ASTM Test Method	100
Melt Point, °F	D-87	125
Color, Saybolt	D-156	+30
Flash Point, C.O.C., °F	D-92	405
Penetration, Needle	D-1321	
at 77°F		13
at 100°F		70
at 110°F		90
Oil Content, % Wt.	D-721	0.1
Tensile Strength, p.s.i. at 73°F	D-1320	275
Gradient Block Pt., (Pick/Block) °F	D-1465	93/94
Refractive Index at 100°C	D-1747	1.4180
Lbs./Gal. at 60°F		7.59
at 210°F		6.29

Another type of paraffin wax which has been used successfully is made by Mobile Oil Corporation and sold under the designation 133/135 having the following properties:

FULLY REFINED WAXES	133/135 AMP
Color, Saybolt	+30
Viscosity at 210°F, SUS	39

2

-continued

FULLY REFINED WAXES	133/135 AMP
Melting Point, °F ASTM	131
Blocking Point, °F	101
Flash Point, °F COC	430
Tensile Strength (T.O.)psi	330
Oil Content, % by Wt.	0.2
Lbs/Gal at 160°F (Liquid)	6.41
Lbs/Gal at 60°F (Solid)	7.62

A typical microcrystalline wax is sold by Shell Chemical Company under the trademark SHELLMAX 500 and has the following properties:

	ASTM Test Method	500
Melt Point, °F	D-127	141
Color, ASTM	D-1500	Lt.2.0
Flash Point, C.O.C., °F	D-92	565
Penetration, Needle	D-1321	
at 77°F		21
at 100°F		52
at 110°F		125
Oil Content, % Wt.	D-721	0.9
Refractive Index at 100°C	D-1747	1.4440
Lbs./Gal.		
at 60°F		7.75
at 210°F		6.67

Another microcrystalline wax that has given satisfactory results is made by Mobile Oil Corporation and sold under the trademarks Mobilwax 2305 and Mobilwax 2305 BR having the following properties:

	Mobilwax 2305	Mobilwax 2305 BR
Melting Point, °F (ASTM-127)	176	176
Color, ASTM	2	2.5
Viscosity at 210°F, SUS	86	160
Needle Penetration at 77°F	27	27
at 108°F	95	95
at 115°F	130	130
Oil Content, %	4.0	4.0
Flash Point, °F (COC)	540	540
Wgt./Gal.lbs at 180°F	6.71	6.71
Wgt./Gal.lbs at 60°F	7.74	7.74

Chlorinated Solvent may comprise any one of the number of well-known solvents such as perchloroethylene.

A typical perchloroethylene is such as sold by The Dow Chemical Company under the designation "Special Vapor Degreasing Grade" having the following specifications and properties:

SPECIFICATION*	
Appearance	Clear, free of sediment and suspended matter
Color APHA, Maximum	15
Distillation Range, at 760, IBP-DP	118–122°C
Water Content, Maximum	
Karl Fischer Method, ppm	30 ppm
Non Volatile Matter, Maximum	25 ppm
Free Halogens, Maximum	none
Acidity (as HCl) Maximum	none
Alkalinity (as NaOH) Maximum	30 ppm
Specific Gravity at 25/25°C	1.614–1.622
Acid Acceptance (as NaOH)	
by Titration	0.149–0.176
By Calculation	0.156–0.190
Stability with Copper	Passes test

3

-continued

PROPERTIES	
Freezing Point	−9°F(−23°C)
Pounds per gallon at 25°C	13.47
Refractive index at 25°C	1.503
Viscosity at 25°C, centipoises	0.84
Flash Point	none
Fire Point	none
Heat of vaporization at b.p.:	
Cal./g	50.1
BTU/lb.	90.2
Specific Heat, cal./g°C	0.21
*Dow Method of Analysis 59015	

The petroleum distillate may be one of the various types preferably having a boiling point ranging from 350° to 380°F.

A typical petroleum distillate is generally known in the trade as Solvent 140. For example, such a solvent is sold by Shell Chemical Company under the designation Shell Sol 140 having the following properties:

PROPERTY	TEST METHOD	Shell Sol 140
Specific Gravity at 60°F	ASTM D-1250	0.786
Gravity, °API	ASTM D-287	48.5
Pounds per Gallon at 60°F	ASTM D-1250	6.55
Color, Saybolt	ASTM D-156	+30
Kauri-Butanol Number	ASTM D-1133	31
Aniline Point, °F	ASTM D-611/D1012	155
Mixed Aniline Point °F	ASTM D-611/D-1012	—
Flash Point, T.C.C., °F	ASTM D-56	141
Distillation, °F	ASTM D-86	
IBP		370
10% Recovered		371
30%		372
50%		373
70%		375
90%		378
Dry Point		—
End Point		408
Evaporation Rate, Seconds	Shell Evapo-Rater	
10%		1050
30%		3230
50%		5470
70%		7830
90%		10400
100%		13700
Composition, % Volume		
Paraffins		48.4
Naphthenes		47.7
Aromatics(total)		3.9
Toluene plus Ethyl Benzene		0.0
C_9 plus Aromatics excluding EB		3.9

A similar solvent is sold by Grow Solvent Company, Inc., under the designation Solvent GS 140 and has the following properties:

A.S.T.M. DISTILLATION:		
I.B.P.	363°F	183.0°C
5%	366	185.6
10%	367	186.1
20%	368	186.7
30%	369	187.2
40%	370	187.8
50%	371	188.3
60%	372	188.9
70%	373	189.4
80%	374	190.0
90%	376	191.1
95%	379	192.8
Dry Point	383	195.0
A.P.I. Gravity at 60°F		51.2°
Specific Gravity at 60/60°F		0.7745
Weight Per Gallon at 60°F		6.448
Straight Aniline Point		67.8°C
**Kauri Butanol Value		29.4 cc
Tag Closed Cup Flash Point		143°F

4

-continued

Copper Strip Corrosion	Very Slight Tarnish
**Corrected to Toluol at 105.0 cc	

Nonylphenoxypoly(ethyleneoxy)ethanol is commercially available under the trademark "IGERPAL" made by GAF Corporation. [N,N,N''-tetrakis (2-hydroxypropyl) ethylenediamine] is made commercially under the trademark "QUADROL" by Wyandotte Chemicals Corporation, Wyandotte, Michigan.

A preferred composition by weight for the cleaning and waxing composition comprises:

Table I

Wax Content	
Parrafin	3.0%
Microcrystaline	2.0%
Chlorinated Solvent	5.0%
Petroleum Distillate	88.0%
Igerpal (Surfactant)	1.0%
Quadrol (Chelating Agent)	1.0%

Although this composition is preferred, successful results have been obtained with the following range of compositions by weight:

Table II

Wax Content			
Paraffin	10%	10%	3
Microcrystalline	10%	10%	3
Chlorinated Solvent	38%	38%	5
Petroleum Distillate	40%	40%	87
Igerpal (Surfactant)	1%	1%	1
Quadrol (Chelating Agent)	1%	1%	1
	100	100	100

In addition, I have found that the addition of about 1 percent butyl cellusolve facilitates spreadability and rust inhibition.

In accordance with the invention, the cleaning and waxing composition is made by mixing the materials at

room temperature without the addition of heat, thereby minimizing the labor involved. The resultant composition is clear in color.

In the preferred method of manufacture, the following steps are utilized to mix the composition:

1. Heat Petroleum Distillate to 110°F
2. Add Chlorinated Solvent
3. Heat waxes to melting point and add to solvents
4. Add Igerpal with stirring
5. Add Quadrol with stirring

The aforementioned compositions provide a liquid. A paste wax composition may comprise the following compositions by weight:

Table III

Wax Content			
Paraffin	10%	30%	—
Microcrystalline	50%	30%	60%
Chlorinated Solvent	2%	2%	2%
Petroleum Distillate	36%	36%	36%
Igerpal (Surfactant)	1%	1%	1%
Quadrol (Chelating Agent)	1%	1%	1%
	100	100	100

Improved gloss is obtained by adding hexogen octoate driers and ethylene glycol n-butyl ether.

Hexogen octoate driers are essentially an odorless solution of metallic salts of 2-ethyl hexoic acid in Rule 66 mineral spirits.

PHYSICAL PROPERTIES

Product	Color Maximum Gardner	Specific Gravity Range (75°F)	G.H. Viscosity Maximum (77°F)	Pounds/ Gallon (75°F)
Lead 24%	3	1.080–1.110	A	9.00–9.25
Cobalt 12%	Purple	1.035–1.065	J	8.12–8.87
Cobalt 6%	Purple	0.860– .885	A	7.16–7.37
Manganese 6%	Brown	0.875– .920	A	7.29–7.66
Calcium 5%	4	0.890– .940	A	7.41–7.83
Calcium 4%	3	0.860– .884	A	7.16–7.36
Iron 6%	Brown	0.890– .930	A	7.41–7.75
Zinc 8%	2	0.870– .895	A	7.25–7.45
Rare Earth 6%	5	0.850– .880	E	7.10–7.30

A typical ethylene glycol n-butyl ether is sold by The Dow Chemical Company under the designation DOWANOL EB having the following properties:

	Dowanol EB
Molecular Weight	118.2
Boiling Point(mm.Hg. °C)	
760	171.1
10	61.7
Vapor Pressure at 25°C(mm.Hg.)	0.88
Pour Point °F	−103'
Specific Gravity at 25/25°C	0.900
Pounds/Gallon at 25°C	7.49
Viscosity (centistokes) at	
25°C	3.15
60°C	1.51
Flash Point °F (Open Cup)	165
Fire Point °F (Cleveland) (Open Cup)	165
Specific Heat(cal./g./°C) at 25°C	0.56
Surface Tension (Dynes/Cm.)	
25°C	27.4
75°C	23.3
Heat of Vaporization (cal./g.) at 760 mm. Hg.	88.4
Thermal Conductivity k × 10^4 (cal./cm.^{3}/sec./°C/cm) at 60°C	3.55

Typical compositions by weight are as follows:

Table IV

Wax Content	6
Paraffin	0.5
Microcrystalline	4.5
Chlorinated Solvent	2
Petroleum Distillate	89
Igerpal (Surfactant)	1
Quadrol (Chelating Agent)	1
Cobalt Drier	1
Dowanol EB	1
	100

Table IV-continued

Paraffin	0.5	2	1
Microcrystalline	4.5	3	4
Chlorinated Solvent	2	—	—
Petroleum Distillate	89	92	91
Igerpal (Surfactant)	1	1	1
Quadrol (Chelating Agent)	1	1	1
Cobalt Drier	1	1	1
Dowanol EB	1	—	1
	100	100	100

In making the composition set forth in Table IV, the procedure is the same as followed with respect to the compositions of Table I and the additional components are added as the last additions.

When made in accordance with the ranges of percentages heretofore set above, it is in the form of an easily spreadable composition which can be applied by hand or otherwise to the surface being treated. The process of application as by a small cotton cloth removes the dirt.

In accordance with the invention, the resultant applied coating is then rinsed with water which functions to set the coating and produce a long-lasting finish.

In accordance with the invention, the following steps are used in applying the composition:

1. The surface is rinsed to remove grit and loose dirt. Improved results are acquired when the surfaces are dry.

2. The composition is applied uniformly by hand or otherwise to the surface being treated. Light pressure is preferably utilized in order to remove loose grit, grime, grease and dirt.

3. The surface is then rinsed with water, preferably at ambient temperature, which functions to produce a long-lasting finish. The water may be hot or cold. When the surface is in a very cold atmosphere, less water is needed to set the coating.

Although I do not wish to be bound by the theory involved, in my opinion, the step of finally rinsing with cold water serves the function of removing the solvents and helping to set the active ingredients and the wax residue.

The resultant finish takes on the characteristic of a high-gloss satin finish and there is no film which needs to be removed. The water can then be blown or wiped off. Alternatively, the water may be left on a vehicle and as the vehicle is driven, the water will be blown off by the movement of the vehicle leaving a polished finish.

It can thus be seen that in accordance with the invention, rubbing and buffing is entirely eliminated. By a slight wiping, an even better polished surface is obtained which will have a longer life.

The cleaning and protective coating composition of the present invention has the further advantage of providing rust inhibiting protective coating to the surface. The composition does not utilize any detergent and thereby obviates the adverse effects of such detergent on painted surfaces.

In order to clean surfaces that have not been cleaned for some time and which require rubbing to remove fading or which have unevenly painted surfaces or have substantial quantities of dirt, it has been found that various materials may be added which provide a slight abrasive action which will facilitate the removal of the dirt.

Where the surface being treated is a metal finish such as a car, the additives may comprise silica, baking soda and abrasive material such as coconut shells. A typical silica which may be used is commercially available under the trademark "HYFLO" by John Manville Products Corporation.

Typical compositions which are suitable for treating metal, glass and the like, which require severe cleaning, are as follows by weight:

Table V

Silica	20	—	50
Baking Soda	5	—	25
Water	10	—	10
Composition of Table I	40	50	15
Ground Coconut Shells	5	25	—
Microcrystalline Wax	20	25	—
	100	100	100

The cleaning composition of Table V is applied directly on a dry surface with a soft cloth or wheel preferably in a circular motion with light pressure. A portion of the composition of Tables I and II is then applied over this composition and rinsed with water. The resultant coating produces a very long-lasting polished and protective finish which also has rust inhibiting compositions. The composition may be used on painted wood surfaces, silver, brass, copper and the like.

For treating aluminum and similar surfaces, the following compositions by weight have been found satisfactory:

Table VI

Silica	40
Baking Soda	5
Composition of Table I	50
Ground Coconut Shells	5

The cleaning composition including the additives is applied in the usual fashion. The surface is then rubbed or buffed and a coating of the composition of the above Table II is applied in the manner heretofore described.

I claim:

1. A cleaning and protective coating composition consisting essentially of a mixture of wax residue such as paraffin and microcrystalline wax, perchlorethylene, petroleum distillate having a boiling point ranging between 350° and 380°F., and a nonionic surfactant such as nonylphenoxypoly(ethyleneoxy)ethanol and a small amount of [N,N,N',N'-tetrakis(2-hydroxypropyl)ethylenediamine].

2. The composition set forth in claim 1 wherein said paraffin wax comprises at least 3%, said microcrystalline wax comprises at least 2%, said nonionic surfactant comprises at least 1% and said ethylenediamine comprises at least 1%.

3. The composition set forth in claim 1 including butyl cellusolve.

4. The composition set forth in claim 1 including an hexogen octoate drier and ethylene glycol n-butyl ether.

5. The method of treating a surface to clean and protect the same which comprises applying a coating of a composition consisting essentially of a mixture of wax residue such as paraffin and microcrystalline wax, perchloroethylene, petroleum distillate having a boiling point ranging between 350° and 380°F., and a nonionic surfactant such as nonylphenoxypoly(ethyleneoxy)ethanol and a small amount of [N,N,N',N'-tetrakis(2-hydroxypropyl) ethylenediamine], and thereafter setting the applied coating by treating the surface with water.

6. The method set forth in claim 1 wherein said paraffin wax comprises at least 3%, said microcrystalline wax comprises at least 2%, said nonionic surfactant comprises at least 1%, and said ethylenediamine comprises at least 1%.

* * * * *

United States Patent [19]

Kaliardos [11] 4,356,036

[45] Oct. 26, 1982

[54] ANTI-CORROSION COATING FOR METALS

[76] Inventor: Nicolas Kaliardos, 10725 Morang Ave., Detroit, Mich. 48224

[21] Appl. No.: 279,865

[22] Filed: Jul. 2, 1981

[51] Int. Cl.³ C09D 5/10

[52] U.S. Cl. 106/1.12; 106/1.17; 106/14.34; 106/14.38; 106/14.39; 106/14.44; 106/230; 106/239; 106/241; 106/271; 106/272; 524/400; 524/438; 524/441; 524/466; 524/488

[58] Field of Search 106/14.29, 14.34, 14.35, 106/14.38, 14.39, 14.43, 14.44, 1.12, 1.17, 230, 239, 241, 271, 272; 524/400, 438, 441, 466, 488

[56] References Cited

U.S. PATENT DOCUMENTS

2,641,551	6/1953	Smith et al.	106/14.34
2,995,532	8/1981	Cantrell et al.	106/14.34

Primary Examiner—Lorenzo B. Hayes

Attorney, Agent, or Firm—Barnes, Kisselle, Raisch & Choate

[57] ABSTRACT

An anti-corrosion coating for metals comprising a mixture of aluminum paste or zinc paste, microcrystalline wax, aromatic hydrocarbon resin, chlorinated rubber, neutral barium sulfonate, chlorinated solvent, aromatic hydrocarbon solvent, and mineral spirits.

7 Claims, No Drawings

ANTI-CORROSION COATING FOR METALS

This invention relates to anti-corrosion coatings and particularly such coatings for fabricated steel parts.

BACKGROUND AND SUMMARY OF THE INVENTION

In the manufacture of automobiles and the like, there is a tendency for fabricated metal parts, such as steel parts, to corrode even after painting especially in the inside areas where portions of the metal are folded into close proximity to other portions and not painted.

Accordingly, among the objectives of the invention are to provide anti-corrosion compositions for metal which will protect the metal surfaces against corrosion even when portions of the part are folded on one another.

Basically, the anti-corrosion composition embodying the invention comprises a mixture of aluminum paste or zinc paste, microcrystalline wax, aromatic hydrocarbon resin, chlorinated rubber, natural barium sulfonate, chlorinated solvent, aromatic hydrocarbon solvent and mineral spirits.

Aluminum paste is well known material comprising 65-75% aluminum flake, by weight, and 25-35% solvent such as mineral spirits, by weight. Typical aluminum pastes are sold by Aluminum Company of America under the designations Standard Paste Nos. 6221 and 6240.

Zinc paste is a well known material comprising zinc flake and solvent such as mineral spirits. Typical zinc pastes are sold by United States Bronze Powders, Inc., under the designation Zinc Flake Paste 751.

The term microcrystalline wax is well understood in the art. A typical microcrystalline wax is sold by Shell Chemical Company under the trademark SHELLMAX 500 and has the following properties:

	ASTM	
Flash Point, C.O.C., °F.	D-92	565
Penetration, Needle	D-1321	
at 77° F.		21
at 100° F.		52
at 110° F.		125
Oil Content, % Wt.	D-721	0.9
Refractive Index	D-1747	
at 100° C.		1.4440
Lbs./Gal.		
at 60° F.		7.75
at 210° F.		6.67

Another microcrystalline wax that has given satisfactory results is made by Mobil Oil Corporation and sold under the trademarks Mobilwax 2305 and Mobilwax 2305 BR having the following properties:

	Mobilwax 2305	Mobilwax 2305 BR
Melting Point, °F. (ASTM-127)	176	176
Color, ASTM	2	2.5
Viscosity at 210° F. SUS	86	160
Needle Penetration at 77° F.	27	27
at 108° F.	95	95
at 115° F.	130	130
Oil Content, %	4.0	4.0
Flash Point, °F. (COC)	540	540
Wgt./Gal.lbs at 180° F.	6.71	6.71
Wgt./Gal.lbs at 60° F.	7.74	7.74

Aromatic hydrocarbon resins are low molecular weight, nonpolar, amber-colored thermoplastic resins produced from petroleum derived monomers. Typical resins are sold by Hercules Incorporated, Wilmington, Del., under the trademark PICCO.

Satisfactory results have been achieved utilizing resins sold by Hercules Incorporated under the trademark PICCO and having the following properties:

		PICCO RESIN						
		6070	6100	6110	6115	6120	6130	6140
Softening point, R&B °C.		68–73	98–102	108–112	113–118	118–122	128–132	140–144
Color, Gardner, max		12	11	11	11	12	12	12
Viscosity at 25° C. 70% solids in toluene								
Gardner-Holdt		E-H	R-U	T-X	V-Y	U-Y	—	—
Stokes		—	—	—	—	—	15–27	27–55
TYPICAL PROPERTIES								
Softening point, R&B °C.		70	100	110	115	120	130	140
Color, Gardner		11	9	9	9	11	11	11
Viscosity at 25° C. 70% solids in toluene								
Gardner-Holdt		G	T	V	W	X	—	—
Stokes		—	—	—	—	—	21	38
Acid number		<1	<1	<1	<1	<1	<1	<1
Saponification number		<1	<1	<1	<1	<1	<1	<1
Bromine number		3.8	6.7	5.3	5.2	11.7	14.0	21.4
Density at 25° C.:	lbs/gal	8.50	8.83	8.86	8.86	8.91	8.91	8.91
	kg/L	1.02	1.06	1.07	1.07	1.07	1.07	1.07
Flash point, COC:	°F.	460	475	490	500	520	525	530
	°C.	237	246	254	260	271	274	277
Melt viscosity, °C.:	1 poise	170	195	205	217	222	229	245
	10 poises	135	157	171	178	181	190	205
	100 poises	110	133	141	151	154	164	180

Melt Point, °F.	Test Method	500
	D-127	141
Color, ASTM	D-1500	L1.2.0

Chlorinated rubber is a rubber that contains 66+% combined chlorine. Typical chlorinated rubbers are manufactured by Hercules Incorporated, Wilmington,

Del., and sold under the trademark Parlon and having the following properties:

PROPERTIES	
Freezing Point	−9° F.(−23° C.)
Pounds per gallon at 25° C.	13.47
Refractive index at 25° C.	1.503
Viscosity at 25° C., centipoises	0.84
Flash Point	none
Fire Point	none
Heat of vaporization at b.p.:	
-Cal./g	50.01
BTU/lb.	90.2
Specific Heat, cal./g° C.	0.21

*Dow Method of Analysis 59015

The petroleum distillate may be one of the various types preferably having a boiling point ranging from 350° to 380° F.

A typical petroleum distillate is generally known in the trade as Solvent 140. For example, such a solvent is sold by Shell Chemical Company under the designation Shell Sol 140 having the following properties:

PROPERTY	TEST METHOD	Shell Sol 140
Specific Gravity at 60° F.	ASTM D-1250	0.786
Gravity, °API	ASTM D-287	48.5
Pounds per Gallon at 60° F.	ASTM D-1250	6.55
Color, Saybolt	ASTM D-156	+30
Kauri-Butanol Number	ASTM D-1133	31
Aniline Point, °F.	ASTM D-611/D-1012	155
Mixed Aniline Point °F.	ASTM D-611/D-1012	—
Flash Point, T.C.C., °F.	ASTM D-56	141
Distillation, °F.	ASTM D-86	
IBP		370
10% Recovered	371	
30%		372
50%		373
70%		375
90%		378
Dry Point		—
End Point		408
Evaporation Rate, Seconds	Shell Evapo-Rater	
10%		1050
30%		3230
50%		5470
70%		7830
90%		10400
100%		13700
Composition, % Volume		
Paraffins		48.4
Naphthenes		47.7
Aromatics(total)		3.9
Toluene plus		0.0
Ethyl Benzene		
C_8 plus Aromatics excluding EB		3.9

A similar solvent is sold by Grow Solvent Company, Inc., under the designation Solvent GS 140 and has the following properties:

A.S.T.M. DISTILLATION:		
I.B.P.	363° F.	183.0° C.
5%	366	185.6
10%	367	186.1
20%	368	186.7
30%	369	187.2
40%	370	187.8
50%	371	188.3
60%	372	188.9

-continued

A.S.T.M. DISTILLATION:		
70%	373	189.4
80%	374	190.0
90%	376	191.1
95%	379	192.8
Dry Point	383	195.0

A.P.I. Gravity at 60° F.	51.2°
Specific Gravity at 60/60° F.	0.7745
Weight Per Gallon at 60° F.	6.448
Straight Aniline Point 67.8° C.	
**Kauri Butanol Value	29.4 cc
Tag Closed Cup Flash Point	143° F.
Copper Strip Corrosion	Very Slight Tarnish

**Corrected to Toluol at 105.0 cc

Chlorinated solvent may comprise any one of the number of well-known solvents such as perchloroethylene.

A typical perchloroethylene is such as sold by The Dow Chemical Company under the designation "Special Vapor Degreasing Grade" having the following specifications and properties:

SPECIFICATION*	
Appearance	Clear, free of sediment and suspended matter
Color APHA, Maximum	15
Distillation Range, at 760, IBP-DP	118-122° C.
Water Content, Maximum Karl Fischer Method, ppm	30 ppm
Non Volatile Matter, Maximum	25 ppm
Free Halogens, Maximum	none
Acidity (as HCl) Maximum	none
Alkalinity (as NaOH) Maximum	30 ppm
Specific Gravity at 25/25° C.	1.614–1.622
Acid Acceptance (as NaOH)	
by Titration	0.149–0.176
By Calculation	0.156–0.190
Stability with Copper	Passes test

Dow Method of Analysis 39015

A typical barium sulfonate is manufactured by Witco Chemical Corporation, New York, N.Y., under the trademark Neutral Barium Petronate 50-S and is a synthetic barium sulfonate having the following typical tests:

% Barium sulfonate	50.3
% Barium	6.9
% Mineral oil	49.5
% Water	0.2
Total alkalinity	3.4 mg KOH/g
Saybolt viscosity @ 210° F.	100
Equivalent weight	
as Sodium	460
as Barium	1011
ASTM Dilute Color	1.5

The compositions embodying the invention may have the following range of compositions by weight:

	%
Aluminum paste or zinc paste	15–43
Microcrystalline wax	.5–4
Aromatic hydrocarbon resin	10–18
Chlorinated rubber	2–6
Neutral barium sulfonate	.5–1
Chlorinated solvent	7–23
Aromatic hydrocarboo solvent	22–32

-continued

	%
Mineral spirits	1.3–4

The compositions embodying the invention and utilizing aluminum may have the following ranges of composition by weight:

	%
Aluminum paste	21-28
Microcrystalline wax	1.3-3.5
Aromatic hydrocarbon resin	7-23
Neutral barium sulfonate	.5-1
Chlorinated solvent	7-23
Aromatic hydrocarbon solvent	23-42
Mineral spirits	1.3-3.5

In the above aluminum compositions, the chlorinated solvent is preferably perchloroethylene and the aromatic hydrocarbon solvents are preferably toluene ranging from 8–14% by weight and xylene ranging from 15-28% by weight.

The compositions embodying the invention and utilizing zinc may have the following ranges of compositions by weight:

	%
Zinc paste	15–43
Microcrystalline wax	.5–4
Aromatic hydrocarbon resin	10–18
Neutral barium sulfonate	.5–1
Chlorinated solvent	7–23
Aromatic hydrocarbon solvent	23–42
Mineral spirits	1.9–4

In the above zinc compositions, the chlorinated solvent is preferably perchloroethylene and the aromatic hydrocarbon solvents are preferably toluene ranging from 11–16% by weight and xylene ranging from 11–16% by weight.

Specific examples of the compositions are as follows:

	EXAMPLE 1		EXAMPLE 2	
	Weight	Percent	Weight	Percent
6221 Aluminum Paste Pigment	3 lbs	23	2 lbs	21
Picco Resin 6140-Flake	3 lbs	23	2 lbs	21
Perchloroethylene	3 lbs	23	2 lbs	21
Toluene	1 lb	8	1 lb	10
Xylene	2 lbs	15	2 lbs	21
Wax	3 oz	1.5	2 oz	1.3
Mineral Spirits	3 oz	1.5	2 oz	1.3
Igepal	4 drops		2 drops	
Neutral Barium Petronate	1 oz	.5	1 oz	
Parlon S10	4 oz	2	2 oz	1.3
Parlon S20	4 oz	2	2 oz	1.3
Cellusolve Acetate	4 oz	2		.5
TOTAL	13 lbs 3 oz	101%	9 lbs 6 oz	99.8%

	EXAMPLE 3		EXAMPLE 4	
	Weight	Percent	Range	Percent
Alcoa Aluminum Pigment	2 lbs	23.2	2 lbs	28.3
Picco Resin 6140 - Flake	1 lb 8 oz	17.4	8 oz	7
Perchloroethylene	1 lb 8 oz	17.4	8 oz	7

6

-continued

	EXAMPLE 3		EXAMPLE 4	
	Weight	Percent	Range	Percent
Toluene	1 lb	11.6	1 lb	14.2
Xylene	2 lbs	23.2	2 lbs	28.3
Wax	2 oz	1.5	4 oz	3.5
Mineral Spirits	2 oz	1.5	4 oz	3.5
Igepal	1 oz	.7	0	0
Neutral Barium Petronate	1 oz	.7	1 oz	.9
Parlon S10	2 oz	1.5	4 oz	3.5
Parlon S20	2 oz	1.5	4 oz	3.5
TOTAL	8 lbs 10 oz	100.2%	7 lbs 1 oz	99.7%

	EXAMPLE 5		EXAMPLE 6	
	Weight	Percent	Range	Percent
Zinc Flake	2 lbs	23.2	2 lbs	30.2
Perchloroethylene	2 lbs	23.2	1 lb	15.1
Xylene	1 lb	11.6	1 lb	15.1
Toluene	1 lb	11.6	1 lb	15.1
Mineral Spirits	4 oz	2.9	2 oz	1.9
6140 Picco Resin Flake	1 lb 8 oz	17.4	1 lb	15.1
Wax	4 oz	2.9	2 oz	1.9
Parlon S10	4 oz	2.9	2 oz	1.9
Parlon S20	4 oz	2.9	2 oz	1.9
Neutral Barium Petronate	1 oz	.7	1 oz	.9
Cellusolve Acetate	1 oz	.7	1 oz	.9
TOTAL	8 lbs 10 oz	100.0%	6 lbs 10 oz	100.0%

	EXAMPLE 7		EXAMPLE 8	
	Weight	Percent	Range	Percent
Zinc Flake	4 lbs	31.4	6 lbs	43.1
Xylene	2 lbs	15.7	2 lbs	14.3
Toluene	2 lbs	15.7	2 lbs	14.3
Perchloroethylene	1 lb	7.9	1 lb 8 oz	10.8
Parlon S10	8 oz	3.9	6 oz	2.7
Wax	8 oz	3.9	1 oz	.5
Neutral Barium Petronate	2 oz	.9	1 oz	.5
Cellusolve Acetate	2 oz	.9	1 oz	.5
6140 Picco Resin Flake	2 lbs	15.7	1 lb 8 oz	10.8
Mineral Spirits	8 oz	3.9	6 oz	2.7
TOTAL	12 lbs 12 oz	99.9%	13 lbs 15 oz	100.2%

The various compositions heretofore described have been tested and have been found to provide good corrosion resistance on bare steel panels in a salt cabinet for over 360 hours, humidity resistance for over 500 hours,

no blistering, partial immersion salt solution resistance for at least 260 hours, partial immersion detergent solution resistance for at least 260 hours, and good adhesion.

The composition embodying the invention is preferably made by first separately mixing a wax emulsion, a chlorinated rubber emulsion, and an aromatic hydrocarbon resin emulsion. In a typical example, the mixing is as follows:

	Wax Emulsion	
	Per Gallon	% By Weight
Mineral spirits	4 lbs	43%
Microcrystalline wax (180° F. melting point)	4 lbs	43%
Perchloroethylene	16 oz	11%
Neutral Barium Petronate	4 oz	2%
Igepal	1 oz	1%
TOTAL	9 lbs 5 oz	

Procedure: Heat and emulsify wax in mineral spirits. When dissolved and clear, add perchloroethylene, Igepal and Neutral Barium Petronate. Heat until clear. Cool.

	Chlorinated Rubber Emulsion		
	Per Gallon		% By Weight
Parlon S10	1 lb	5.33 oz	17%
Parlon S20	1 lb	5.33 oz	17%
Xylene	5 lbs	5.33 oz	66%
TOTAL	8 lbs		

Procedure: Dissolve at room temperature until clear.

	Aromatic Hydrocarbon Resin Emulsion	
	Per Gallon	% By Weight
Picco 6140 Flake	1 lb	50%
Perchloroethylene	1 lb	50%
TOTAL	2 lbs	

Procedure: Dissolve at room temperature until clear.

	Per Gallon	% By Weight
Picco 6140 Flake	1 lb	50%
Perchloroethylene	1 lb	50%
TOTAL	2 lbs	

Procedure: Dissolve at room temperature until clear.

Preparation For Final Composition of Aluminum Anti-Corrosion Wax Type Coating

Place all solvents by weight in container. Place premixed resin emulsion in solvent mixture. Place premixed wax emulsion in solvent mixture. Place premixed Parlon emulsion in solvent mixture. Stir for a maximum of 2 minutes.

Add aluminum pigment and stir. Do not shake.

Add AL 161 Syloid and AL 1 Syloid.

Add cellusolve acetate.

The following results are from tests administered on bare steel:

1. Flash point—not less than 11.7° C. (53° F.).
2. Storage stability—composition remains stable after 6 months at 23.8° C. (75° F.).
3. Sprayability—composition is sprayable without sagging or build up at bottom of panel.
4. High temperature flow point—composition does not sag, separate, or degenerate when exposed to temperatures up to 200° F.
5. Toxicity—composition is not toxic when applied or in the dry state.

6. Viscosity—12-15 seconds in Fisher #2 cup after 10 minute agitation.
7. Salt spray corrosion resistance—withstands 360 hours exposure without base metal corrosion, adhesion loss, blisters or wrinkles.
8. Salt solution partial immersion test—withstands 7 days partial immersion in 5% salt tap water solution in an enclosed jar without corrosion, adhesion loss, blisters, or wrinkles. Immersion jar is placed inside a high-humidity cabinet, 100% relative humidity at 100° F. to maintain constant temperature.
9. Detergent solution partial immersion test—withstands 7 days in solution composed of 10 grams of DuPont #7 car wash compound per gallon of tap water without corrosion, adhesion loss, blisters or wrinkles.
10. Environmental corrosion—withstands 10 cycles without corrosion, adhesion loss, blisters or wrinkles.
11. Humidity resistance—withstands 500 hours humidity exposure. Humidity cabinet is maintained at 100% relative humidity at 100° F. Composition does not develop corrosion, adhesion loss, blisters or wrinkles.
12. Cold impact—withstands 2.8 joules (25 inch pounds) reverse impacts at −30° C. (−20° F.) without showing separation of wax from the substrate.
13. The anti-corrosion coating is removable from any topcoat surface without staining or discoloring the topcoat (painted surface).

The use of perchloroethylene is very important because it cleans and dissolves any oil present on the surface and allows the coating to make good contact with the surface. If bare steel is to be coated, I recommend that it be cleaned with perchloroethylene first. If the surface is contaminated with oil or grease, perchloroethylene will facilitate the adhesion process. The Parlon provides water and detergent resistance and helps prevent rust from starting. The wax and barium sulfonate

keep the coating soft and prevent rust and moisture from creeping in. The aluminum pigment forms a protective finishing layer over the other ingredients.

This invention, when properly applied to a clean surface, will provide rust prevention especially in crevices and hard to reach places for all metals. This coating should not be oven dried. Up to 200° F. may be applied to the surface and sagging will not occur. It will air dry in 5–10 minutes at room temperature. This composition is primarily for automobiles, inside the entire body, and especially for crevices, bottoms of doors, around plate glass, behind bumpers, on all frames, and all sheet metal whether galvanized or not. It has an advantage over zinc in that it requires less aluminum pigment and provides equal if not more protection. It provides good protection on bare, zinc-coated, or prime steel. I believe that the above compositions will provide good protection for pre-rusted surfaces such as highway bridges, for steel frames, cracked surfaces between steel frames and cement, and for water towers and other surfaces which retain moisture, detergent residue, or salt and are prone to rust.

I claim:

1. An anti-corrosion coating composition comprising a mixture of aluminum paste or zinc paste containing aluminum or zinc flakes and a solvent, microcrystalline wax, aromatic hydrocarbon resin having a softening point, R and B, of 70° C.–140° C., chlorinated rubber having a combined chlorine content of at least 66%,

neutral barium sulfonate, chlorinated solvent, aromatic hydrocarbon solvent and mineral spirits.

2. The anti-corrosion coating composition set forth in claim 1 wherein said composition comprises by weight:

	%
aluminum paste or zinc paste	15–43
microcrystalline wax	.5–4
aromatic hydrocarbon resin	10–18
chlorinated rubber	2–6
neutral barium sulfonate	.5–1
chlorinated solvent	7–23
aromatic hydrocarbon solvent	22–32
mineral spirits	1.3–4

3. The anti-corrosion coating composition set forth in claim 1 wherein said composition comprises by weight:

	%
aluminum paste	21–28
microcrystalline wax	1.3–3.5
aromatic hydrocarbon resin	7–23
neutral barium sulfonate	.5–1
chlorinated solvent	7–23
aromatic hydrocarbon solvent	23–42

-continued

	%
mineral spirits	1.3–3.5

4. The anti-corrosion coating composition set forth in claim 1 wherein said composition comprises by weight:

	%
zinc paste	15–43
microcrystalline wax	.5–4
aromatic hydrocarbon resin	10–18
neutral barium sulfonate	.5–1
chlorinated solvent	7–23
aromatic hydrocarbon solvent	23–42
mineral spirits	1.9–4

5. The anti-corrosion coating composition set forth in claim 1 wherein said chlorinated solvent comprises perchloroethylene.

6. The anti-corrosion coating composition set forth in claim 1 wherein said aromatic hydrocarbon solvent comprises toluene and xylene.

7. The anti-corrosion coating composition set forth in claim 1 wherein the composition is produced by separately preparing a wax emulsion, a chlorinated rubber emulsion, and an aromatic hydrocarbon resin emulsion and thereafter mixing the several emulsions.

* * * * *

§ 271. Infringement of patent

(a) Except as otherwise provided in this title, whoever without authority makes, uses or sells any patented invention, within the United States during the term of the patent therefor, infringes the patent.

(b) Whoever actively induces infringement of a patent shall be liable as an infringer.

(c) Whoever sells a component of a patented machine, manufacture, combination or composition, or a material or apparatus for use in practicing a patented process, constituting a material part of the invention, knowing the same to be especially made or especially adapted for use in an infringement of such patent, and not a staple article or commodity of commerce suitable for substantial noninfringing use, shall be liable as a contributory infringer.

(d) No patent owner otherwise entitled to relief for infringement or contributory infringement of a patent shall be denied relief or deemed guilty of misuse or illegal extension of the patent right by reason of his having done one or more of the following: (1) derived revenue from acts which if performed by another without his consent would constitute contributory infringement of the patent; (2) licensed or authorized another to perform acts which if performed without his consent would constitute contributory infringement of the patent; (3) sought to enforce his patent rights against infringement or contributory infringement.

Rule 11. Signing of Pleadings, Motions, and Other Papers; Sanctions

Every pleading, motion, and other paper of a party represented by an attorney shall be signed by at least one attorney of record in his individual name, whose address shall be stated. A party who is not represented by an attorney shall sign his pleading, motion, or other paper and state his address. Except when otherwise specifically provided by rule or statute, pleadings need not be verified or accompanied by affidavit. The rule in equity that the averments of an answer under oath must be overcome by the testimony of two witnesses or of one witness sustained by corroborating circumstances is abolished. The signature of an attorney or party constitutes a certificate by him that he has read the pleading, motion, or other paper; that to the best of his knowledge, information, and belief formed after reasonable inquiry it is well grounded in fact and is warranted by existing law or a good faith argument for the extension, modification, or reversal of existing law, and that it is not interposed for any improper purpose, such as to harass or to cause unnecessary delay or needless increase in the cost of litigation. If a pleading, motion, or other paper is not signed, it shall be stricken unless it is signed promptly after the omission is called to the attention of the pleader or movant. If a pleading, motion, or other paper is signed in violation of this rule, the court, upon motion or upon its own initiative, shall impose upon the person who signed it, a represented party, or both, an appropriate sanction, which may include an order to pay to the other party or parties the amount of the reasonable expenses incurred because of the filing of the pleading, motion, or other paper, including a reasonable attorney's fee.

Rule 34. Production of Documents and Things and Entry Upon Land for Inspection and Other Purposes

(a) Scope. Any party may serve on any other party a request (1) to produce and permit the party making the request, or someone acting on his behalf, to inspect and copy, any designated documents (including writings, drawings, graphs, charts, photographs, phono-records, and other data compilations from which information can be obtained, translated, if necessary, by the respondent through detection devices into reasonably usable form), or to inspect and copy, test, or sample any tangible things which constitute or contain matters within the scope of Rule 26(b) and which are in the possession, custody or control of the party upon whom the request is served; or (2) to permit entry upon designated land or other property in the possession or control of the party upon whom the request is served for the purpose of inspection and measuring, surveying, photographing, testing, or sampling the property or any designated object or operation thereon, within the scope of Rule 26(b).

(b) Procedure. The request may, without leave of court, be served upon the plaintiff after commencement of the action and upon any other party with or after service of the summons and complaint upon that party. The request shall set forth the items to be inspected either by individual item or by category, and describe each item and category with reasonable particularity. The request shall specify a reasonable time, place, and manner of making the inspection and performing the related acts.

The party upon whom the request is served shall serve a written response within 30 days after the service of the request, except that a defendant may

Rule 36. Requests for Admission

(a) Request for Admission. A party may serve upon any other party a written request for the admission, for purposes of the pending action only, of the truth of any matters within the scope of Rule 26(b) set forth in the request that relate to statements or opinions of fact or of the application of law to fact, including the genuineness of any documents described in the request. Copies of documents shall be served with the request unless they have been or are otherwise furnished or made available for inspection and copying. The request may, without leave of court, be served upon the plaintiff after commencement of the action and upon any other party with or after service of the summons and complaint upon that party.

Each matter of which an admission is requested shall be separately set forth. The matter is admitted unless, within 30 days after service of the request, or within such shorter or longer time as the court may allow, the party to whom the request is directed serves upon the party requesting the admission a written answer or objection addressed to the matter, signed by the party or by his attor-

defendant shall not be required to serve answers or objections before the expiration of 45 days after service of the summons and complaint upon him. If objection is made, the reasons therefor shall be stated. The answer shall specifically deny the matter or set forth in detail the reasons why the answering party cannot truthfully admit or deny the matter. A denial shall fairly meet the substance of the requested admission, and when good faith requires that a party qualify his answer or deny only a part of the matter of which an admission is requested, he shall specify so much of it as is true and qualify or deny the remainder. An

answering party may not give lack of information or knowledge as a reason for failure to admit or deny unless he states that he has made reasonable inquiry and that the information known or readily obtainable by him is insufficient to enable him to admit or deny. A party who considers that a matter of which an admission has been requested presents a genuine issue for trial may not, on that ground alone, object to the request; he may, subject to the provisions of Rule 37(c), deny the matter or set forth reasons why he cannot admit or deny it.

The party who has requested the admissions may move to determine the sufficiency of the answers or objections. Unless the court determines that an objection is justified, it shall order that an answer be served. If the court determines that an answer does not comply with the requirements of this rule, it may order either that the matter is admitted or that an amended answer be served. The court may, in lieu of these orders, determine that final disposition of the request be made at a pre-trial conference or at a designated time prior to trial. The provisions of Rule 37(a)(4) apply to the award of expenses incurred in relation to the motion.

(b) **Effect of Admission.** Any matter admitted this rule is conclusively established unless irt on motion permits withdrawal or amend- f the admission. Subject to the provisions of 5 governing amendment of a pre-trial order, irt may permit withdrawal or amendment he presentation of the merits of the action subserved thereby and the party who l the admission fails to satisfy the court :hdrawal or amendment will prejudice him :aining his action or defense on the merits. nission made by a party under this rule is

purpose of the pending action only and is
dmission by him for any other purpose nor
e used against him in any other proceeding.

led Dec. 27, 1946, eff. Mar. 19, 1948; Mar. 30,
July 1, 1970.)

serve a response within 45 days after service of the summons and complaint upon that defendant. The court may allow a shorter or longer time. The response shall state, with respect to each item or category, that inspection and related activities will be permitted as requested, unless the request is objected to, in which event the reasons for objection shall be stated. If objection is made to part of an item or category, the part shall be specified. The party submitting the request may move for an order under Rule 37(a) with respect to any objection to or other failure to respond to the request or any part thereof, or any failure to permit inspection as requested.

A party who produces documents for inspection shall produce them as they are kept in the usual course of business or shall organize and label them to correspond with the categories in the request.

(c) Persons Not Parties. This rule does not preclude an independent action against a person not a party for production of documents and things and permission to enter upon land.

(As amended Dec. 27, 1946, eff. Mar. 19, 1948; Mar. 30, 1970, eff. July 1, 1970; Apr. 29, 1980, eff. Aug. 1, 1980.)

Rule 37. Failure to Make or Cooperate in Discovery: Sanctions

(a) Motion for Order Compelling Discovery. A party, upon reasonable notice to other parties and all persons affected thereby, may apply for an order compelling discovery as follows:

(1) *Appropriate Court.* An application for an order to a party may be made to the court in which the action is pending, or, on matters relating to a deposition, to the court in the district where the deposition is being taken. An application for an order to a deponent who is not a party shall be made to the court in the district where the deposition is being taken.

(2) *Motion.* If a deponent fails to answer a question propounded or submitted under Rules 30 or 31, or a corporation or other entity fails to make a designation under Rule 30(b) (6) or 31(a), or a party fails to answer an interrogatory submitted under Rule 33, or if a party, in response to a request for inspection submitted under Rule 34, fails to respond that inspection will be permitted as requested or fails to permit inspection as requested, the discovering party may move for an order compelling an answer, or a designation, or an order compelling inspection in accordance with the request. When taking a deposition on oral examination, the proponent of the question may complete or adjourn the examination before he applies for an order.

If the court denies the motion in whole or in part, it may make such protective order as it would have been empowered to make on a motion made pursuant to Rule 26(c).

(3) *Evasive or Incomplete Answer.* For purposes of this subdivision an evasive or incomplete answer is to be treated as a failure to answer.

(4) *Award of Expenses of Motion.* If the motion is granted, the court shall, after opportunity for hearing, require the party or deponent whose conduct necessitated the motion or the party or attorney advising such conduct or both of them to pay to the moving party the reasonable expenses incurred in obtaining the order, including attorney's fees, unless the court finds that the opposition to the motion was substantially justified or that other circumstances make an award of expenses unjust.

If the motion is denied, the court shall, after opportunity for hearing, require the moving party or the attorney advising the motion or both of them to pay to the party or deponent who opposed the motion the reasonable expenses incurred in opposing the motion, including attorney's fees, unless the court finds that the making of the motion was substantially justified or that other circumstances make an award of expenses unjust.

If the motion is granted in part and denied in part, the court may apportion the reasonable expenses incurred in relation to the motion among the parties and persons in a just manner.

(b) Failure to Comply with Order.

(1) *Sanctions by Court in District Where Deposition is Taken.* If a deponent fails to be sworn or to answer a question after being directed to do so by the court in the district in which the deposition is being taken, the failure may be considered a contempt of that court.

(2) *Sanctions by Court in Which Action is Pending.* If a party or an officer, director, or managing agent of a party or a person designated under Rule 30(b)(6) or 31(a) to testify on behalf of a party fails to obey an order to provide or permit discovery, including an order made under subdivi-

sion (a) of this rule or Rule 35, or if a party fails to obey an order entered under Rule 26(f), the court in which the action is pending may make such orders in regard to the failure as are just, and among others the following:

(A) An order that the matters regarding which the order was made or any other designated facts shall be taken to be established for the purposes of the action in accordance with the claim of the party obtaining the order;

(B) An order refusing to allow the disobedient party to support or oppose designated claims or defenses, or prohibiting him from introducing designated matters in evidence;

(C) An order striking out pleadings or parts thereof, or staying further proceedings until the order is obeyed, or dismissing the action or proceeding or any part thereof, or rendering a judgment by default against the disobedient party;

(D) In lieu of any of the foregoing orders or in addition thereto, an order treating as a contempt of court the failure to obey any orders except an order to submit to a physical or mental examination;

(E) Where a party has failed to comply with an order under Rule 35(a) requiring him to produce another for examination, such orders as are listed in paragraphs (A), (B), and (C) of this subdivision, unless the party failing to comply shows that he is unable to produce such person for examination.

In lieu of any of the foregoing orders or in addition thereto, the court shall require the party failing to obey the order or the attorney advising him or both to pay the reasonable expenses, including attorney's fees, caused by the failure, unless the court finds that the failure was substantially

justified or that other circumstances make an award of expenses unjust.

(c) Expenses on Failure to Admit. If a party fails to admit the genuineness of any document or the truth of any matter as requested under Rule 36, and if the party requesting the admissions thereafter proves the genuineness of the document or the truth of the matter, he may apply to the court for an order requiring the other party to pay him the reasonable expenses incurred in making that proof, including reasonable attorney's fees. The court shall make the order unless it finds that (1) the request was held objectionable pursuant to Rule 36(a), or (2) the admission sought was of no substantial importance, or (3) the party failing to admit had reasonable ground to believe that he might prevail on the matter, or (4) there was other good reason for the failure to admit.

(d) Failure of Party to Attend at Own Deposition or Serve Answers to Interrogatories or Respond to Request for Inspection. If a party or an officer, director, or managing agent of a party or a person designated under Rule 30(b)(6) or 31(a) to testify on behalf of a party fails (1) to appear before the officer who is to take his deposition, after being served with a proper notice, or (2) to serve answers or objections to interrogatories submitted under Rule 33, after proper service of the interrogatories, or (3) to serve a written response to a request for inspection submitted under Rule 34, after proper service of the request, the court in which the action is pending on motion may make such orders in regard to the failure as are just, and among others it may take any action authorized under paragraphs (A), (B), and (C) of subdivision (b)(2) of this rule. In lieu of any order or in addition thereto, the court shall require the party

failing to act or the attorney advising him or both to pay the reasonable expenses, including attorney's fees, caused by the failure, unless the court finds that the failure was substantially justified or that other circumstances make an award of expenses unjust.

The failure to act described in this subdivision may not be excused on the ground that the discovery sought is objectionable unless the party failing to act has applied for a protective order as provided by Rule 26(c).

(e) [Abrogated]

(f) [Repealed. Pub.L. 96–481, Title II, § 205(a), Oct. 21, 1980, 94 Stat. 2330.]

(g) Failure to Participate in the Framing of a Discovery Plan. If a party or his attorney fails to participate in good faith in the framing of a discovery plan by agreement as is required by Rule 26(f), the court may, after opportunity for hearing, require such party or his attorney to pay to any other party the reasonable expenses, including attorney's fees, caused by the failure.

(As amended Dec. 29, 1948, eff. Oct. 20, 1949; Mar. 30, 1970, eff. July 1, 1970; Apr. 29, 1980, eff. Aug. 1, 1980; Pub.L. 96–481, Title II, § 205(a), Oct. 21, 1980, 94 Stat. 2330.)

SUPPLEMENTARY NOTE OF ADVISORY COMMITTEE REGARDING THIS RULE

Note. The operation of Rule 55(b) (Judgment) is directly affected by the Soldiers' and Sailors' Civil Relief Act of 1940, 50 U.S.C., Appendix, § 501 et seq. Section 200 of the Act [50 U.S.C.A. Appendix, § 520] imposes specific requirements which must be fulfilled before a default judgment can be entered, e.g., *Ledwith* v. *Storkan*, D.Neb.1942, 6 Fed.Rule Serv. 60b.24, Case 2, 2 F.R.D. 539, and also provides for the vacation of a judgment in certain circumstances. See discussion in Commentary, Effect of Conscription Legislation on the Federal Rules, 1940, 3 Fed.Rules Serv. 725; 3 Moore's Federal Practice, 1938, Cum.Supplement § 55.02.

Rule 56. Summary Judgment

(a) For Claimant. A party seeking to recover upon a claim, counterclaim, or cross-claim or to obtain a declaratory judgment may, at any time after the expiration of 20 days from the commencement of the action or after service of a motion for summary judgment by the adverse party, move with or without supporting affidavits for a summary judgment in his favor upon all or any part thereof.

(b) For Defending Party. A party against whom a claim, counterclaim, or cross-claim is asserted or a declaratory judgment is sought may, at any time, move with or without supporting affidavits for a summary judgment in his favor as to all or any part thereof.

(c) Motion and Proceedings Thereon. The motion shall be served at least 10 days before the time fixed for the hearing. The adverse party prior to the day of hearing may serve opposing affidavits. The judgment sought shall be rendered forthwith if

the pleadings, depositions, answers to interrogatories, and admissions on file, together with the affidavits, if any, show that there is no genuine issue as to any material fact and that the moving party is entitled to a judgment as a matter of law. A summary judgment, interlocutory in character, may be rendered on the issue of liability alone although there is a genuine issue as to the amount of damages.

(d) Case Not Fully Adjudicated on Motion. If on motion under this rule judgment is not rendered upon the whole case or for all the relief asked and a trial is necessary, the court at the hearing of the motion, by examining the pleadings and the evidence before it and by interrogating counsel, shall if practicable ascertain what material facts exist without substantial controversy and what material facts are actually and in good faith controverted. It shall thereupon make an order specifying the facts that appear without substantial controversy, including the extent to which the amount of damages or other relief is not in controversy, and directing such further proceedings in the action as are just. Upon the trial of the action the facts so specified shall be deemed established, and the trial shall be conducted accordingly.

(e) Form of Affidavits; Further Testimony; Defense Required. Supporting and opposing affidavits shall be made on personal knowledge, shall set forth such facts as would be admissible in evidence, and shall show affirmatively that the affiant is competent to testify to the matters stated therein. Sworn or certified copies of all papers or parts thereof referred to in an affidavit shall be attached thereto or served therewith. The court may permit affidavits to be supplemented or opposed by depositions, answers to interrogatories, or further affidavits. When a motion for summary judgment is made and supported as provided in this

rule, an adverse party may not rest upon the mere allegations or denials of his pleading, but his response, by affidavits or as otherwise provided in this rule, must set forth specific facts showing that there is a genuine issue for trial. If he does not so respond, summary judgment, if appropriate, shall be entered against him.

(f) When Affidavits are Unavailable. Should it appear from the affidavits of a party opposing the motion that he cannot for reasons stated present by affidavit facts essential to justify his opposition, the court may refuse the application for judgment or may order a continuance to permit affidavits to be obtained or depositions to be taken or discovery to be had or may make such other order as is just.

(g) Affidavits Made in Bad Faith. Should it appear to the satisfaction of the court at any time that any of the affidavits presented pursuant to this rule are presented in bad faith or solely for the purpose of delay, the court shall forthwith order the party employing them to pay to the other party the amount of the reasonable expenses which the filing of the affidavits caused him to incur, including reasonable attorney's fees, and any offending party or attorney may be adjudged guilty of contempt.

(As amended Dec. 27, 1946, eff. Mar. 19, 1948; Jan. 21, 1963, eff. July 1, 1963.)

Rule 72. Magistrates, Pretrial Matters

(a) Nondispositive Matters. A magistrate to whom a pretrial matter not dispositive of a claim or defense of a party is referred to hear and determine shall promptly conduct such proceedings as are required and when appropriate enter into the record a written order setting forth the disposition of the matter. The district judge to whom the case is assigned shall consider objections made by the parties, provided they are served and filed within 10 days after the entry of the order, and shall modify or set aside any portion of the magistrate's order found to be clearly erroneous or contrary to law.

(b) Dispositive Motions and Prisoner Petitions. A magistrate assigned without consent of the parties to hear a pretrial matter dispositive of a claim or defense of a party or a prisoner petition challenging the conditions of confinement shall promptly conduct such proceedings as are required. A record shall be made of all evidentiary proceedings before the magistrate, and a record may be made of such other proceedings as the magistrate deems necessary. The magistrate shall enter into the record a recommendation for disposition of the matter, including proposed findings of fact when appropriate. The clerk shall forthwith mail copies to all parties.

A party objecting to the recommended disposition of the matter shall promptly arrange for the transcription of the record, or portions of it as all parties may agree upon or the magistrate deems sufficient, unless the district judge otherwise directs. Within 10 days after being served with a

copy of the recommended disposition, a party may serve and file specific, written objections to the proposed findings and recommendations. A party may respond to another party's objections within 10 days after being served with a copy thereof. The district judge to whom the case is assigned shall make a de novo determination upon the record, or after additional evidence, of any portion of

Rule 701. Opinion Testimony by Lay Witnesses

If the witness is not testifying as an expert, his testimony in the form of opinions or inferences is limited to those opinions or inferences which are (a) rationally based on the perception of the witness and (b) helpful to a clear understanding of his testimony or the determination of a fact in issue.

NOTES OF ADVISORY COMMITTEE ON PROPOSED RULES

The rule retains the traditional objective of putting the trier of fact in possession of an accurate reproduction of the event.

Limitation (a) is the familiar requirement of first-hand knowledge or observation.

Limitation (b) is phrased in terms of requiring testimony to be helpful in resolving issues. Witnesses often find difficulty in expressing themselves in language which is not that of an opinion or conclusion. While the courts have made concessions in certain recurring situations, necessity as a standard for permitting opinions and conclusions has proved too elusive and too unadaptable to particular situations for purposes of satisfactory judicial administration. McCormick § 11. Moreover, the practical impossibility of determining by rule what is a "fact," demonstrated by a century of litigation of the question of what is a fact for purposes of pleading under the Field Code, extends into evidence also. 7 Wigmore § 1919. The rule assumes that the natural characteristics of the adversary system will generally lead to an acceptable result, since the detailed account carries more conviction than the broad assertion, and a lawyer can be expected to display his witness to the best advantage. If he fails to do so, cross-examination and argument will point up the weakness. See Ladd, Expert Testimony, 5 Vand.L.Rev. 414, 415–417 (1952). If, despite these considerations, attempts are made to introduce meaningless assertions which amount to little more than choosing up sides, exclusion for lack of helpfulness is called for by the rule.

The language of the rule is substantially that of Uniform Rule 56(1). Similar provisions are California Evidence Code § 800; Kansas Code of Civil Procedure § 60–456(a); New Jersey Evidence Rule 56(1).

Rule 702. Testimony by Experts

If scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion or otherwise.

NOTES OF ADVISORY COMMITTEE ON PROPOSED RULES

An intelligent evaluation of facts is often difficult or impossible without the application of some scientific, technical, or other specialized knowledge. The most common source of this knowledge is the expert witness, although there are other techniques for supplying it.

Most of the literature assumes that experts testify only in the form of opinions. The assumption is logically unfounded. The rule accordingly recognizes that an expert on the stand may give a dissertation or exposition of scientific or other principles relevant to the case, leaving the trier of fact to apply them to the facts. Since much of the criticism of expert testimony has centered upon the hypothetical question, it seems wise to recognize that opinions are not indispensable and to encourage the use of expert testimony in non-opinion form when counsel believes the trier can itself draw the requisite inference. The use of opinions is not abolished by the rule, however. It will continue to be permissible for the experts to take the further step of suggesting the inference which should be drawn from applying the specialized knowledge to the facts. See Rules 703 to 705.

Whether the situation is a proper one for the use of expert testimony is to be determined on the basis of assisting the trier. "There is no more certain test for determining when experts may be used than the common

sense inquiry whether the untrained layman would be qualified to determine intelligently and to the best possible degree the particular issue without enlightenment from those having a specialized understanding of the subject involved in the dispute." Ladd, Expert Testimony, 5 Vand.L.Rev. 414, 418 (1952). When opinions are excluded, it is because they are unhelpful and therefore superfluous and a waste of time. 7 Wigmore § 1918.

The rule is broadly phrased. The fields of knowledge which may be drawn upon are not limited merely to the "scientific" and "technical" but extend to all "specialized" knowledge. Similarly, the expert is viewed, not in a narrow sense, but as a person qualified by "knowledge, skill, experience, training or education." Thus within the scope of the rule are not only experts in the strictest sense of the word, e.g., physicians, physicists, and architects, but also the large group sometimes called "skilled" witnesses, such as bankers or landowners testifying to land values.

§ 636. Jurisdiction, powers, and temporary assignment

(a) Each United States magistrate serving under this chapter shall have within the territorial jurisdiction prescribed by his appointment—

(1) all powers and duties conferred or imposed upon United States commissioners by law or by the Rules of Criminal Procedure for the United States District Courts;

(2) the power to administer oaths and affirmations, impose conditions of release under section 3146 of title 18, and take acknowledgements, affidavits, and depositions; and

(3) the power to conduct trials under section 3401, title 18, United States Code, in conformity with and subject to the limitations of that section.

(b)(1) Notwithstanding any provision of law to the contrary—

(A) a judge may designate a magistrate to hear and determine any pretrial matter pending before the court, except a motion for injunctive relief, for judgment on the pleadings, for summary judgment, to dismiss or quash an indictment or information made by the defendant, to suppress evidence in a criminal case, to dismiss or to permit maintenance of a class action, to dismiss for failure to state a claim upon which relief can be granted, and to involuntarily dismiss an action. A judge of the court may reconsider any pretrial matter under this subparagraph (A) where it has been shown that the magistrate's order is clearly erroneous or contrary to law.

(B) a judge may also designate a magistrate to conduct hearings, including evidentiary hearings, and to submit to a judge of the court proposed findings of fact and recommendations for the

disposition, by a judge of the court, of any motion excepted in subparagraph (A), of applications for posttrial relief made by individuals convicted of criminal offenses and of prisoner petitions challenging conditions of confinement.

(C) the magistrate shall file his proposed findings and recommendations under subparagraph

(B) with the court and a copy shall forthwith be mailed to all parties.

Within ten days after being served with a copy, any party may serve and file written objections to such proposed findings and recommendations as provided by rules of court. A judge of the court shall make a de novo determination of those portions of the report or specified proposed findings or recommendations to which objection is made. A judge of the court may accept, reject, or modify, in whole or in part, the findings or recommendations made by the magistrate. The judge may also receive further evidence or recommit the matter to the magistrate with instructions.

(2) A judge may designate a magistrate to serve as a special master pursuant to the applicable provisions of this title and the Federal Rules of Civil Procedure for the United States district courts. A judge may designate a magistrate to serve as a special master in any civil case, upon consent of the parties, without regard to the provisions of rule 53(b) of the Federal Rules of Civil Procedure for the United States district courts.

(3) A magistrate may be assigned such additional duties as are not inconsistent with the Constitution and laws of the United States.

(4) Each district court shall establish rules pursuant to which the magistrates shall discharge their duties.

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF MICHIGAN
SOUTHERN DIVISION

NICOLAS KALIARDOS,

Plaintiff,

v.

GENERAL MOTORS CORPORATION, BASF CORPORATION, DAUBERT INDUSTRIES, INC., H.B. FULLER COMPANY, and H.B. FULLER AUTOMOTIVE PRODUCT, INC., jointly and severally,

Defendants.
_____/

Civil Action No. 88-73729

HONORABLE PAUL V. GADOLA
U.S. DISTRICT JUDGE

JUDGEMENT

The court, having reviewed the file in the above-entitled matter and the magistrate judge's October 7, 1993 report and recommendation, having accepted and adopted the report and recommendation as the findings and conclusions of the court, and having granted the motions for summary judgement of all of

the above-named defendants,

It is hereby ORDERED and ADJUDGED that plaintiff take nothing and that the action be dismissed on the merits.

It is further ORDERED that the clerk serve a copy of this judgement by United States mail on the counsel for plaintiff and on counsel for defendants.

Dated at Detroit, Michigan, this _____ day of _____, 1994.

APPROVED:

_____
PAUL V. GADOLA
UNITED STATES
DISTRICT JUDGE

JOHN P. MAYER

by: _____
Deputy Clerk

I declare under penalty of perjury that the foregoing is true and correct.

Nicolas Kalliardos
Pro Se, Petitioner
405 Moross Road
Grosse Pointe, Michigan
48236
(313) 884-6537

Executed:
March 21, 1995

OFFICE OF THE CLERK

No. 94-1574

IN THE

SUPREME COURT OF THE UNITED STATES

OCTOBER TERM, 1994

NICHOLAS KALIARDOS,

Petitioner,

v.

GENERAL MOTORS CORPORATION, BASF CORPORATION, H.B. FULLER COMPANY, H.B. FULLER AUTOMOTIVE PRODUCTS, INC., and DAUBERT INDUSTRIES, INC.,

Respondents.

ON PETITION FOR A WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

RESPONDENTS' GENERAL MOTORS, BASF AND FULLER BRIEF IN OPPOSITION

HERBERT FURMAN
29709 Deer Run
Farmington Hills,
Michigan 48331
(810) 661-2293
Attorney for Respondent-Defendant General Motors Corporation.

BERNARD J. CANTOR
(Counsel of Record)
MICHAEL P. BRENNAN
ROBERT S. NOLAN
HARNESS, DICKEY & PIERCE, P.L.C.
5455 Corporate Drive
Troy, Michigan 48098
(810) 641-1600
Attorneys for Respondents-Defendants.

April 20, 1995

Washington, D.C. • THIEL PRESS • (202) 328-3206

BEST AVAILABLE COPY

90

RULE 14.1(a) QUESTIONS PRESENTED BY PETITIONER

1. Did the magistrate-judge in the trial court err in holding that the evidence produced by Plaintiff in response to Defendant's motion for summary judgment did not create a genuine issue of material fact concerning whether accused products infringed asserted claims, either literally or under the doctrine of equivalents, such as to require a full trial?
2. Did the trial judge in the trial court err in adopting the "Report and Recommendation" of the magistrate-judge and dismissing Plaintiff's action on the merits and by abusing his discretion in denying Plaintiff's motion for leave to supplement his responses with a test report of his expert and/or in not granting Kaliardos' request for an oral hearing?
3. Did the appeal court err in affirming the district court's dismissal of Plaintiff-Appellant's case concerning the evidence Kaliardos offered and the plain language and historical intent of the application of Federal Rule 56?
4. Is the federal judiciary using Rule 56 to rid their dockets of difficult cases and/or litigants and, if so, will such use of Rule 56 be allowed to continue?

PARTIES TO THE PROCEEDINGS RULE 14.1(b)

All the parties in the court below are identified in the caption of the Petition.

RULE 29.1 LIST OF PARENTS AND SUBSIDIARIES

General Motors Corporation's Rule 29.1 list is attached at Appendix D.

BASF Corporation's Rule 29.1 list is attached at Appendix E.

H.B. Fuller Company's Rule 29.1 list is attached at Appendix F.

H.B. Fuller Automotive Products, Inc. is a wholly-owned subsidiary of H.B. Fuller Company.

Daubert Industries, Inc.'s Rule 29.1 list of parents and subsidiaries appears in its separate Brief in Opposition to the Petition for Writ of Certiorari.

Page

TABLE OF CONTENTS

RULE 14.1(a) QUESTIONS PRESENTED BY PETITIONER i

PARTIES TO THE PROCEEDINGS RULE 14.1(b) ii

RULE 29.1 LIST OF PARENTS AND SUBSIDIARIES ii

TABLE OF CONTENTS. iii

TABLE OF AUTHORITIES, STATUTES AND OTHER AUTHORITIES. v

SUMMARY OF OPPOSITION TO CERTIORARI 2

COUNTERSTATEMENT OF CASE 5

FACTUAL BACKGROUND 6

PROCEEDINGS IN THE DISTRICT COURT. 9

KALIARDOS PATENT NO. 3,959,530. 13

KALIARDOS PATENT NO. 4,356,036. 15

KALIARDOS LACKS FACTUAL EVIDENCE OF SIMILARITY OF FUNCTION/WAY/RESULTS 16

KALIARDOS' EXPERT TESTIFIED THAT BASF'S COATINGS DO NOT CONTAIN MOST OF THE INGREDIENTS SPECIFIED IN KALIARDOS' PATENT CLAIMS. 18

KALIARDOS' EXPERT BYRD TESTIFIED THAT THE FULLER COATINGS DO NOT CONTAIN ALL OF KALIARDOS' CLAIMED INGREDIENTS. 19

KALIARDOS' EXPERT GEECK TESTIFIED THAT DAUBERT'S COATING DOES NOT CONTAIN ALL OF THE CLAIMED INGREDIENTS 20

EXCLUSION OF EVIDENCE 21

ARGUMENT AGAINST CERTIORARI 22

Page

THE QUESTIONS PRESENTED FOR REVIEW BY APPELLANT KALIARDOS UNDER RULE 14.1(a). 25

"1. Did the magistrate-judge in the trial court err in holding that the evidence produced by Plaintiff in response to Defendant's motion for summary judgment did not create a genuine issue of material fact concerning whether accused products infringed asserted claims, either literally or under the doctrine of equivalents, such as to require a full trial?" 25

"2. Did the trial judge in the trial court err in adopting the "Report and Recommendation" of the magistrate-judge and dismissing Plaintiff's action on the merits and by abusing his discretion in denying Plaintiff's motion for leave to supplement his responses witha test report of his expert and/or in not granting Kaliardos' request for an oral hearing?" 26

"3. Did the appeal court err in affirming the district court's dismissal of Plaintiff-Appellant's case concerning the evidence Kaliardos offered and the plain language and historical intent of the application of Federal Rule 56?" 27

"4. Is the federal judiciary using Rule 56 to rid their dockets of difficult cases and/or litigants and, if so, will such use of Rule 56 be allowed to continue?" 28

CONCLUSION 30

APPENDICES:

Appendix A – Magistrate's "Report and Recommendation" 1a

Appendix B – District Court's Opinion Granting Summary Judgment of Non-Infringement to Co-Defendants National Starch and Beazer East. 27a

Appendix C – Order Granting Partial Summary Judgment of Non-Infringement 39a

Appendix D – General Motors Corporation Rule 29.1 Statement 42a

Page

Appendix E – BASF Corporation Rule 29.1 Statement 49a

Appendix F – H.B. Fuller Rule 29.1 Statement 50a

TABLE OF AUTHORITIES

Cases:

Adickes v. S.H. Kress & Co., 398 U.S. 144, 158 n.17 (1970). 26

Anderson v. Liberty Lobby, Inc., 477 U.S. 242, 249-50, 91 L.Ed.2d 202, 212, 106 S.Ct. 2505, 2511 (1986) 2, 3, 24

Arizona v. California, 460 U.S. 605, 618, 75 L.Ed.2d 318, 333, 1031 S.Ct. 1382, 1397 (1993) 14

Builders Concrete, Inc. v. Bremerton Concrete Products Co., 757 F.2d 255, 257 (Fed. Cir. 1985) 2, 3, 22

Celotex Corp. v. Catrett, 477 U.S. 317, 322, 91 L.Ed.2d 265, 273, 106 S.Ct. 2548, 2552 (1986). 2, 23, 28

Fowle v. C&C Cola, 868 F.2d 59, 67 (3rd Cir. 1989) 26

Graver Tank & Mfg. Co. v. Linde Air Products Co., 339 U.S. 605, 609-10, 94 L.Ed. 1097, 1102, 70 S.Ct. 854, 856-57 (1950) 3, 22, 23

Griffin v. M.D.O.C., 5 F.3d 186, 190 (6th Cir., 1993). 14

Intellicall, Inc. v. Phonometrics Inc., 952 F.2d 1384, 1389 (1992). 25

Kaliardos v. General Motors et al., 777 F.Supp. 543 (E.D. Mich., 1991). 20

Lear Siegler, Inc. v. Sealy Mattress Co. of Michigan, 837 F.2d 1422, 1425-26 (Fed. Cir. 1989) 22-23

Lewmar Marine, Inc. v. Barient, Inc., 827 F.2d 744, 747 (Fed. Cir. 1987) 4

Malta v. Schulmerich Carollons, Inc., 925 F.2d 1320, 1327, 1329 (Fed. Cir. 1991), *reh. den.*, 959 F.2d 923 (1992), *cert. denied*, 119 L.Ed.2d 566 (1992). 3, 17, 22, 23

Cases, continued: Page

Mannesmann Demag Corp. v. Engineered Metal Products Co., 793 F.2d 1279, 1282 (Fed. Cir. 1986) 3, 22

Markman v. Westview Instruments Inc., 1995 U.S.App. LEXIS 7593, p. 21 (Fed. Cir., Apr. 5, 1995). 14

Matsushita Electric Industrial Co., Ltd. v. Zenith Radio Corporation, 475 U.S. 574, 586-7, 89 L.Ed.2d 538, 552, 106 S.Ct. 1348 (1986) 28

Smithkline Diagnostics Co. v. Helena Laboratories Corp., 859 F.2d 878, 889 (Fed. Cir. 1988) 3, 22

United States v. Raddatz, 447 U.S. 667, 673-74, 65 L.Ed.2d 424, 432, 100 S.Ct. 2406 (1980) 27

Statutes:

28 U.S.C. 636(b)(1)(B). 26, 27

35 U.S.C. §102(b). 4

Other Authorities:

H.R. Rep. No. 94-1609 (1976). 27

Rule 56 Fed.R.Civ.P. 3, 27, 29

Rule 50(a) Fed.R.Civ.P. 25

Rule 56(c) Fed.R.Civ.P. 2, 24

Rule 56(e) Fed.R.Civ.P. 26

Rule 72(b) Fed.R.Civ.P. 26

No. 94-1574

IN THE

SUPREME COURT OF THE UNITED STATES

OCTOBER TERM, 1994

NICHOLAS KALIARDOS,

Petitioner,

v.

GENERAL MOTORS CORPORATION, BASF CORPORATION, H.B. FULLER COMPANY, H.B. FULLER AUTOMOTIVE PRODUCTS, INC., and DAUBERT INDUSTRIES, INC.,

Respondents.

ON PETITION FOR A WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

RESPONDENTS' GENERAL MOTORS, BASF AND FULLER BRIEF IN OPPOSITION

TO THE HONORABLE SUPREME COURT:

The Respondents General Motors Corporation, BASF Corporation, H.B. Fuller Company and H.B. Fuller Automotive Products, Inc. respectfully request that this Court deny the Petition for Writ of Certiorari submitted by Petitioner Nicholas Kaliardos.

SUMMARY OF OPPOSITION TO CERTIORARI

The Petition for Writ of Certiorari should be denied. Summary judgment of noninfringement was properly granted and affirmed because of the admitted lack of evidence that is required by the substantive patent law to prove infringement of the claims of the patents-in-suit. There is no genuine issue of any **material** fact; rather, there is an admitted absence of material facts that are essential to Petitioner's prima facie case. Hence, "the plain language of Rule 56(c) [F.R.C.P.] mandates the entry of summary judgment." *Celotex Corp. v. Catrett*, 477 U.S. 317, 322, 91 L.Ed.2d 265, 273, 106 S.Ct. 2548, 2552 (1986); *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 249-50, 91 L.Ed.2d 202, 212, 106 S.Ct. 2505, 2511 (1986) ("There is no issue for trial unless there is sufficient evidence favoring the nonmoving party for a jury to return a verdict for that party.")

Specifically, there are only two ways to prove infringement under the substantive patent law: (1) **literal** infringement; and (2) "**doctrine of equivalents**" infringement. First, to prove **literal** infringement, the patentee has the burden of showing that every single one of the elements specified in at least one of his patent claims is actually found in the accused product. *E.g., Builders Concrete, Inc. v. Bremerton Concrete Products Co.*, 757 F.2d 255, 257 (Fed.Cir. 1985). Petitioner Kaliardos' experts, however, admitted that at least some of the ingredients specified in his patent claims are **not** found in the accused coating products. Thus, there was insufficient evidence to support a jury verdict of **literal** infringement so that summary judgment was mandated.

Second, to prove infringement under the "**doctrine of equivalents,**" the patentee has the burden of showing that the accused product contains the same **or** the equivalent

of each ingredient specified in at least one patent claim **AND** that the accused product performs substantially the same function, in substantially the same way, to produce substantially the same result as the entire combination of ingredients specified in such patent claim. *Graver Tank & Mfg. Co. v. Linde Air Products Co.*, 339 U.S. 605, 609-10, 94 L.Ed. 1097, 1102, 70 S.Ct. 854, 856-57 (1950); *Builders Concrete, supra* 757 F.2d at 258. In addition, the patentee must explain, by substantial, comparative, **factual** evidence, how and why each of these three similarities exist. *Malta v. Schulmerich Carillons, Inc.*, 925 F.2d 1320, 1327, 1329 (Fed.Cir. 1991), *reh. den.*, 959 F.2d 923 (1992), *cert. denied*, 119 L.Ed.2d 566 (1992). Here, Petitioner Kaliardos' expert testified that he has **no factual evidence** showing that the function/way/results of the accused coatings are similar to the combinations specified in the claims of the patents-in-suit. Thus, there was insufficient evidence to support a jury verdict of infringement under the "**doctrine of equivalents**" so that summary judgment was mandated by Rule 56 F.R.C.P.

There is no such thing as Kaliardos' asserted "presumption of infringement." Under the substantive patent law, the patentee has the burden of proving infringement by a preponderance of evidence. *Smithkline Diagnostics Co. v. Helena Laboratories Corp.*, 859 F.2d 878, 889 (Fed.Cir. 1988); *Mannesmann Demag Corp. v. Engineered Metal Products Co.*, 793 F.2d 1279, 1282 (Fed.Cir. 1986). Petitioner Kaliardos' litany of discovery disputes and discovery motions are not material to the summary judgment decision which focuses on Kaliardos' failure to show all of the essential elements required by the substantive patent law to prove infringement. *Anderson*, 477 U.S. at 247-48, 91 L.Ed.2d at 211 (1986) ("Only

disputes over facts that might affect the outcome of the suit under the governing law will properly preclude the entry of summary judgment. Factual disputes that are irrelevant or unnecessary will not be counted.")[1]

Petitioner Kaliardos' case is based upon his notion, without any factual evidence whatsoever, that General Motors automobile assembly plant personnel must have secretly added the ingredients which Kaliardos lists in his patented recipes into the drums of coating which G.M. purchases, before spraying the coating into automobile doors. Kaliardos simply does not believe the BASF records of the formulations it has used since 1953 to the present—nor does he believe the testimony and the numerous laboratory tests of his own experts—nor the Fuller and Daubert formulation and production records—nor the deposition testimony of numerous BASF, Fuller and General Motors past and present employees—nor the laboratory tests made by each of the Defendants. Yet, each clearly establishes that the accused coatings do not contain the ingredients set forth in his patent claims.

The magistrate-judge summed up Kaliardos' case as follows:

> My review of this record establishes that the formulas used by the defendants in manufacturing their coatings have repeatedly been shown not to contain the essential elements of the Kaliardos patents, through both the disclosure of the formulas and

---

[1] Ironically, if BASF's accused coating actually did infringe, Kaliardos' patents would be invalid under 35 U.S.C. §102(b) because BASF's accused coating was "on sale" by BASF and in use by General Motors for many years before Kaliardos made his inventions and before the filing dates of his patent applications. *Lewmar Marine, Inc. v. Barient, Inc.*, 827 F.2d 744, 747 (Fed. Cir. 1987) ("That which would literally infringe if later in time, anticipates if earlier than the date of the invention.")

> scientific testing of those formulas. There is simply no evidence in this record which would create a genuine issue of material fact as to whether any of the accused products infringe upon Kaliardos' patents either literally or under the doctrine of equivalence. **Simply put, plaintiff's case is one that began with, and continues to rest upon, pure speculation and conclusion.** This is insufficient to withstand summary judgment. Accordingly, for the reasons stated, I respectfully recommend that the defendants' motions for summary judgment be granted and that this matter be dismissed. [emphasis added][2]

COUNTERSTATEMENT OF CASE

Petitioner Kaliardos' Statement of the Case and Statement of Facts omit most of the relevant facts. Therefore, Respondents state such relevant facts below.

Petitioner Kaliardos is appealing from the Federal Circuit's affirmance of the district court's grant, based upon the magistrate-judge's "Report and Recommendation," of three separate motions for summary judgment of non-infringement of Kaliardos' patents. These motions were brought by: (1) General Motors Corporation ("G.M.") and its supplier BASF Corporation, jointly; (2) Daubert; and (3) H.B. Fuller Company and its subsidiary H.B. Fuller Automotive Products, Inc., jointly ("Fuller"). This present Brief in Opposition to the Petition for Certiorari is submitted on behalf of General Motors, BASF and Fuller.

---

[2]See attached Magistrate's Report and Recommendation, p. 26a, Res. App. A. Note that page numbers cited as "A-____," in this brief refer to the Appendix which was submitted to the Federal Circuit.

Kaliardos complains that anti-rust, wax-type coatings which have been used by General Motors in some of its model automobiles, and which have been supplied by the other parties, infringe Kaliardos' Patent Nos. 3,959,530 and 4,356,036. These two patents claim specific formulations or "recipes" for wax-type coatings. Each of the suppliers use different formulations or recipes which was the reason for their separate motions.

FACTUAL BACKGROUND

Starting in 1953, BASF (and its predecessors) supplied General Motors with a coating comprising a mixture of: (1) a synthetic wax; (2) a microcrystalline wax; (3) a hydrocarbon resin; and, (4) an aluminum particle pigment. These ingredients were dissolved in naphtha and mineral spirit solvents. The liquid coating was sprayed into the interiors of car doors and body parts of some, but not all, model cars. The solvents evaporated leaving a thin coating of wax-resin-pigment upon the metal surfaces to protect against moisture and rusting. BASF supplied that coating, substantially unchanged (i.e., except for slight changes in percentages of ingredients) to G.M. for about 34 years, from 1953 until 1987), when it discontinued the product. Kaliardos complains that that coating infringed his patents, even though that coating predates his patents by many years.

The BASF coating meets the requirements of G.M.'s performance specification, No. 998-1128, which describes the tests the coating must pass. (A-656-660)

In 1983, while still using BASF's aluminum colored coating, G.M. began using a "clear" coating (i.e., actually a tan colored coating wihout aluminum pigment) which was supplied by Daubert and others. Fuller began supply-

ing its formulation of the "clear" coating after August 1988. This coating must meet the requirements of G.M.'s performance specification No. 998-2150. Kaliardos asserts that the Daubert formulations infringe both of his patents and that the Fuller formulation infringes only the earlier '530 patent.

In 1972, about 19 years after G.M. began using the accused BASF coating, Nicholas Kaliardos, who was in the drycleaning business and who is a self-taught chemist, invented his first coating recipe, and filed the patent application which became the '530 patent-in-suit that issued May 25, 1976. Between 1973 and 1980, Kaliardos submitted a number of samples of different anti-rust coating formulations to the G.M. Fisher Body Division for performance testing. Mr. Kaliardos stated that "[M]any of the coatings which the plaintiff supplied [to G.M.] do not relate to the patents-in-suit." (Plaintiff's Response to Request No. 5, August 26, 1989). There is no evidence that any of the coatings that Kaliardos supplied contained the specific recipes set forth in his patent claims. The samples which he submitted did not meet G.M. specifications (G.M. engineer Reichel Dep., A-791). In 1980, G.M. advised Mr. Kaliardos that it would no longer test proposed samples because he "has yet to submit any material that would meet our specifications" (A-674).

In 1981, Kaliardos filed his second patent application which issued October 26, 1982 as Patent No. 4,356,036 ('036). The specification of this patent includes a copy of portions of G.M.'s earlier published specification No. 998-1128 which relates to the aluminum colored coating that had been supplied by BASF since 1953.

Regardless as to whether Kaliardos' samples did or did not meet G.M.'s specifications, Mr. Kaliardos' patented

formulations could not be used in an automobile manufacturing plant because his formulations include a large amount of a chlorinated solvent called perchloroethylene or tetrachloroethylene. This ingredient is required in both of his patents. Perchloroethylene is a dry-cleaner's spot remover and is "very important" to his formulation. Kaliardos' '036 patent (col. 8, line 31, A-50) states:

> "The use of perchloroethylene is very important because it cleans and dissolves any oil present on the surface and allows the coating to make good contact with the surface."

G.M. does not use any chlorinated solvents in coatings because the material is hazardous (G.M. engineer Reichel, A-799-800). Kaliardos' chemical expert Geeck testified that perchloroethylene is not permitted in an automotive plant because it is dangerous in large quantities (Geeck Dep., A-3326). Kaliardos' other chemical expert Strandbergh testified that perchloroethylene is toxic and is considered to be carcinogenic (Strandbergh Dep., A-864). Fuller's chemist testified "It's very irritating to the lungs and throat area." (Pellny Dep., A-744.)

Moreover, perchloroethylene costs about three to four times more than the naphtha solvent used by all of the Defendants (Edwards Dep., A-923; Fuller chemist Pellny Dep., A-774). In addition, perchloroethylene attacks and damages the paint that is used on cars. Therefore, it is not usable in a car (BASF analytical chemist Fujimoto Dep. A1029-30). Perchloroethylene, in the quantities required by Kaliardos' formulations, is detectable by its distinctive smell, according to Kaliardos' chemical expert (Epstein Dep., A-909).

There is no evidence that anyone has ever manufactured, purchased or used the coating formulations that are specified in any of the Kaliardos patent claims.

In 1980, when General Motors refused to test any more samples, Mr. Kaliardos concluded, without any factual support, that G.M. must be using his patented formulations. Hence, he wrote to G.M. in the early 1980's complaining of infringement.

In response, G.M. and BASF advised him that they were not using his formulation and, in 1984, they gave him a liquid sample of the BASF coating to test so as to satisfy himself that the BASF formulation was not the same as his patented formulations. Kaliardos had that material tested by a chemical laboratory in 1985. The laboratory reported that it did not find the ingredients of his patented formulations. Nevertheless, Kaliardos filed a complaint in the U.S. District Court in Detroit on September 14, 1988 against G.M. and BASF for patent infringement and alleged conspiracy and misappropriation of his proprietary information. The conspiracy and misappropriation count was dismissed by summary judgment for lack of factual support and as barred by the Statute of Limitations.[3]

PROCEEDINGS IN THE DISTRICT COURT

Discovery depositions were taken of six BASF chemists including: the chemist who originated the formulation of BASF's accused coating in 1953; the two chemists who successively were responsible for the formulation of the BASF coating; BASF's manager of technical services and quality control; BASF's research manager; and two BASF analytical chemists who performed analytical tests on BASF's accused coating. Kaliardos also took the depositions of a former BASF workman who had mixed

---

[3]See magistrate-judge's "Report and Recommendation" of December 27, 1990, A-2337 and the district court's Order of June 5, 1991, A-2363). No appeal was taken from that Order.

BASF coatings and of six G.M. engineers and technicians. In addition, Kaliardos was supplied with all of the BASF formulation data from 1953 to 1987, including ingredients, percentages of ingredients, sources of ingredients, batch mixture records, and reports of chemical laboratory tests.

The Defendants took the discovery depositions of Mr. Kaliardos and of his chemical expert witness, David Byrd, who testified that he had re-tested the same 1984 sample that G.M. and BASF had given to Mr. Kaliardos and that he failed to find in that sample most of the ingredients listed in Kaliardos' patent claims. He hedged on his findings concerning perchloroethylene by stating in his written reports that he detected less than 5% perchloroethylene. However, when cross-examined at his deposition, he admitted that less than 5% was "another way of saying" that he found none (Byrd Dep., A-3002).

As a result of this discovery, on January 30, 1992 G.M. and BASF filed a joint motion for summary judgment of non-infringement. But, before decision, Kaliardos amended his complaint and brought in more supplier companies. He added Defendants Daubert, H.B. Fuller Company, National Starch & Chemical Corporation and Koch Fuels, Inc. Later, he added Beazer East, Inc. and H.B. Fuller Automotive Products, Inc. That resulted in further discovery which delayed the pending G.M./BASF motion for summary judgment.

On September 7, 1990, Koch Fuels was dismissed by summary judgment because it "had no involvement in the subject matter of this suit." Next, on November 12, 1991, National Starch's and Beazer's "Motion for Summary Judgment of Non-Infringement" was granted. They were dismissed because their coatings were found by the court not to infringe Kaliardos' patents, either

literally or under the doctrine of equivalents. That decision is reported at 777 F.Supp. 543 (E.D. Mich., 1991) (see attached copy at Appendix B). No appeal was taken by Kaliardos.[4]

In December 1991, Daubert and Fuller filed their separate motions for summary judgment of non-infringement, and G.M. and BASF, jointly, re-filed their motion for summary judgment of non-infringement. However, rulings were deferred until further discovery depositions were taken of Kaliardos' expert Byrd and of several other chemists who, by then, had been retained by Mr. Kaliardos to conduct more tests on the various coatings involved in this lawsuit. Samples of Fuller's coating, which has a different formulation than the coatings made by BASF or Daubert, were supplied to Kaliardos for these tests. Also, Kaliardos was given complete information about Fuller's formulations, production, etc. Similarly, Daubert supplied complete information concerning its formulations, its records of the contents of each of the batches of coatings it made, etc.

All of this resulted in Kaliardos' stipulation to an "Order Granting Partial Summary Judgment of Non-Infringement," dated October 16, 1992 (Appendix C). This Order held that certain of Kaliardos' patent claims were not infringed literally or under the doctrine of equivalents, and these claims were dismissed from the lawsuit. That left Kaliardos' complaint that: BASF, Daubert and Fuller coatings infringe claims 1 and 2 of

---

[4] In its Opinion, the district court held that certain of the ingredients that are listed in Kaliardos' patent claims were required for either literal infringement or for doctrine of equivalents infringement because these ingredients were added to the claims by Kaliardos in order to secure approval of his patent (777 F.Supp. at pp. 545, 549, 29a-30a, 38a).

the '530 patent under the doctrine of equivalents; that BASF and Daubert coatings literally infringe claims 1, 5 and 6 of the '036 patent; and, that BASF and Daubert coatings infringe claims 1-6 of the '036 patent under the doctrine of equivalents.

The discovery depositions of Kaliardos' expert chemists Byrd and Geeck were no easy matter. They refused to answer numerous questions; they refused to produce test samples; and Byrd walked out of one deposition (which resulted in a motion to compel and an Order assessing sanctions for unilaterally terminating the deposition). A number of court hearings on motions to compel and court Orders were required to obtain meaningful information from them. Obtaining the facts from Kaliardos and his experts Byrd and Geeck dragged over a long period of time. On Defendants' request, the court ordered Byrd and Geeck to appear for the continuations of their depositions in the courthouse where a magistrate was available to immediately rule on their objections to deposition questions or refusals to answer them.

Finally, an oral hearing on the motions for summary judgment was conducted by the magistrate-judge on October 22, 1992. At that time Kaliardos' counsel and Defendants' counsel presented their oral arguments. No testimony was taken at the hearing.

On October 7, 1993, U.S. Magistrate-Judge Marc L. Goldman handed down his "Report and Recommendation" (Appendix A) which recommended that the district judge grant the three motions for summary judgment. Kaliardos filed objections. While his objections were pending, Kaliardos filed a motion for leave to file a belated supplement, comprising an unsworn test report prepared by his expert Byrd, to his responses to the motions for summary judgment of non-infringement. That report

related to tests conducted by Byrd on BASF coatings. In these tests, he mixed a number of additional ingredients into samples of BASF coatings and compared the modified BASF coating samples with each other. He did not compare them with the patented compositions. The district judge denied the motion, holding that the report was untimely and was unverified. Although not decided, it was apparent on its face that the report was unrelated to the issue of whether BASF's actual, unadulterated formulation was the same as the patented formulations. The report did not relate to either Daubert's or Fuller's coatings.

On March 30, 1994, the district court issued its "Order Accepting Magistrate-Judge's October 7, 1993 Report and Recommendation" granting the three motions for summary judgments (A-1) and issued a Judgment dismissing the lawsuit (A-3). Kaliardos appealed only from the district court's Order of March 30, 1994.[5] The Court of Appeals for the Federal Circuit affirmed the district court on November 22, 1994.[6]

Turning now to the patent claims-in-suit and the lack of evidence of infringement:

KALLIARDOS PATENT NO. 3,959,530[7]

Kaliardos asserts that claims 1 and 2 of the '530 patent are infringed by the BASF, Daubert and Fuller coatings. The claims read as follows:

"1. A cleaning and protective coating composition consisting essentially of a mixture of: wax residue

---

[5] Copy attached to Petition at p. 48.

[6] Copy attached to Petition at p. 54.

[7] See copy at Kaliardos' Petition for Writ of Certiorari, p. 62.

such as paraffin and microcrystalline wax, *perchloroethylene*, petroleum distillate *having a boiling point ranging between 350° and 380° F* and, a nonionic surfactant such as nonylphenoxypoly(ethyleneoxy)ethanol and, a small amount of [N,N,N',N'-tetrakis(2-hydroxypropyl)ethylenediamine].

2. The composition set forth in claim 1 wherein said paraffin wax comprises at least 3%, said microcrystalline wax comprises at least 2%, said nonionic surfactant comprises at least 1% and said ethylenediamine comprises at least 1%."

The district court found, in the non-appealed decision granting National Starch's and Beazer's motion for summary judgment, that the italicized terms were changes that were made by Kaliardos in response to the Patent Office examiner's rejection and that "these changes were necessary to secure the patent" (see 777 F.Supp. at p. 545; Kaliardos file history, pp. 33-34, A-1619-1620).[8]

---

[8]The absence of those necessary ingredients from the accused coatings is another reason why summary judgment of non-infringement is appropriate. The district court's unappealed decision that the italicized ingredients are necessary for infringement of the patent claims, due to the Patent Office prosecution history, is the law of the case. *Griffin v. M.D.O.C.*, 5 F.3d 186, 190 (6th Cir., 1993); *Arizona v. California*, 460 U.S. 605, 618, 75 L.Ed.2d 318, 333, 1031 S.Ct. 1382, 1397 (1993) ("As most commonly defined, the doctrine [of law of the case] posits that when a court decides upon a rule of law, the decision should continue to govern the same issues in subsequent stages in the same case.") See *Markman v. Westview Instruments Inc.*, 1995 U.S.App. LEXIS 7593, p. 21 (Fed.Cir., Apr. 5, 1995) ("construing and determining the scope of the claims in a patent is strictly a legal question for the court."

KALIARDOS PATENT NO. 4,356,036[9]

Kaliardos complains that BASF's coating and Daubert's coatings **literally** infringe claims 1, 5 and 6 and, also, infringe claims 1-6 of the '036 patent under the **doctrine of equivalents.** These claims read as follows:

"1. An anti-corrosion coating composition comprising a mixture of aluminum paste or zinc paste containing aluminum or zinc flakes and a solvent, microcrystalline wax, aromatic hydrocarbon resin *having a softening point, R and B, of 70° C.-140° C.*, chlorinated rubber *having a combined chlorine content of at least 66%*, **neutral barium sulfonate**, chlorinated solvent, aromatic hydrocarbon solvent and mineral spirits.

2. The anti-corrosion coating composition set forth in claim 1 wherein said composition comprises by weight:

aluminum paste or zinc	15-43%
microcrystalline wax	.5-4%
aromatic hydrocarbon resin	10-18%
chlorinated rubber	2-6%
neutral barium sulfonate	.5-1%
chlorinate solvent	7-23%
aromatic hydrocarbon solvent	22-32%
mineral spirits	1.3-4%

3. The anti-corrosion coating composition set forth in claim 1 wherein said composition comprises by weight:

aluminum paste	21-28%
microcrystalline wax	1.3-3.5%
aromatic hydrocarbon resin	7-23%
neutral barium sulfonate	.5-1%

[9]Copy at Petition, p. 77.

chlorinated solvent	7-23%
aromatic hydrocarbon solvent	23-42%
mineral spirits	1.3-3.5%

4. The anti-corrosion coating composition set forth in claim 1 wherein said composition comprises by weight:

zinc paste	15-43%
microcrystalline wax	.5-4%
aromatic hydrocarbon resin	10-18%
neutral barium sulfonate	.5-1%
chlorinated solvent	7-23%
aromatic hydrocarbon solvent	23-42%
mineral spirits	1.9-4%

5. The anti-corrosion coating composition set forth in claim 1 wherein said chlorinated solvent comprises perchloroethylene.

6. The anti-corrosion coating composition set forth in claim 1 wherein said aromatic hydrocarbon solvent comprises toluene and xylene.

The district court held that "[T]he italicized terms were changes made by the plaintiff in response to references cited by the P.T.O. These changes were necessary to secure the patent." (See 777 F.Supp. at p. 545.)[10]

KALIARDOS HAS NO EVIDENCE OF SIMILARITY OF FUNCTION/WAY/RESULTS

For infringement under the doctrine of equivalents, the patentee must prove by comparative factual evidence that the accused product, as a whole, has substantially

---

[10]There is no evidence that the italicized terms are found in the accused coatings, which is another reason why summary judgment of non-infringement is appropriate.

the same function/way/results as the entire product that is specified in the patent claims **AND**, in addition, must separately explain how and why the function/way/results are the same. *Malta v. Schulmerich Carillons, Inc.*, *supra*, 925 F.2d at 1327. Kaliardos has presented no such factual evidence. There is no evidence in the record where anyone said or demonstrated or established in any way, whether by fact or even by opinion, that the BASF, Daubert, or Fuller accused coatings have substantially the same function/way/results as the coating compositions that are specified in the patent claims of either the '530 or '036 patents. To the contrary, Kaliardos' expert Byrd testified that he has no such evidence, as follows:

Q. Do you have any evidence to establish that any of the coatings of any of the defendants which are accused of infringements in this case perform substantially the same function in substantially the same way to produce substantially the same results as the compositions that are specified in the claims of Mr. Kaliardos' Patent No. 5,950,530?

A. THE WITNESS: I don't know.

Q. You don't know the answer to that question?

A. That's right. (A-3052-53)

. . . .

Q. Do you have any evidence to establish that any of the accused products of any of the defendants in this lawsuit perform substantially the same function in substantially the same way to produce substantially the same result as those of the composition of chemical ingredients specified in the claims of Mr. Kaliardos' Patent No. 4,356,036?

A. THE WITNESS: No. (A-3052)

With respect to the alleged infringement by Fuller of the '530 patent claims 1 and 2 under the doctrine of

equivalents, Kaliardos' expert Byrd affirmatively stated that the function/way/results are **not** the same:

Q. Is it fair to say that the H.B. Fuller material that you tested does **not** give the same **results** as the Kaliardos' patented formulations?
A. Yes.
Q. Is it fair to say that the H.B. Fuller material that you tested does **not** perform the same **function** as the Kaliardos' patented formulations?
A. Yes.
Q. And is it fair to say that the H.B. Fuller formulations that you tested do **not work** the same way as the Kaliardos' patented formulations?
A. Yes. (A-3026)

Further, Kaliardos, expert Byrd testified that he did not even conduct any comparative tests to determine whether any of the Defendants' coatings work in the same way (A-3049-50) or perform the same functions (A-3051) or produce the same results as the compositions specified in the claims of the '530 (A-3042) or the '036 patents (A-3042).

KALIARDOS' EXPERT TESTIFIED THAT BASF'S COATINGS DO NOT CONTAIN MOST OF THE INGREDIENTS SPECIFIED IN THE PATENT CLAIMS

Referring to the ingredients that are listed in **claim 1** of the **'530 patent**, Byrd testified that BASF's coating "Do not have a nonionic surfactant" (A-3015); that he did not find any nonylphenoxypoly(ethyleneoxy)ethanol in BASF's coating (A-3032); that he did not find any [N,N,N',N'-tetrakis(2-hydrocypropyl)ethylenediamine] in any BASF coating (A-3018, 3028, 3032); and that he did not find any petroleum distillate *having a boiling*

point ranging between 350° and 380° F in BASF's coating (A-3017). Further, initially he testified that he did not detect any *perchloroethylene* in BASF's coating (A-3004).

Referring to claim 2 of the '530 patent, Byrd testified that he never determined the amounts of the ingredients in any of the accused coatings of any of the Defendants (A-3064). He admitted that he does not have any evidence that BASF's accused coating contains the percentages of ingredients that are spelled out in claim 2 of the '530 patent (A-3062, 3063).

As to claims 1, 5 and 6 of the '036 patent, Kaliardos' expert Byrd testified that BASF's coatings do not have each of the claimed ingredients. More specifically, Byrd testified that he did not find in BASF's coating any aromatic hydrocarbon resin *having a softening point, R and B, of 70° C.-140° C* (A-3004). He testified that he did not find any chlorinated rubber *having a combined chlorine content of at least 66%* (A-3004); and he did not find any chlorinated solvent (A-3005). He testified that he did not find **neutral barium sulfonate** (A-3005); nor any barium sulfonate at all (A-3031, 3017). As to claims 2, 3 and 4 of the '036 patent, he did not even attempt to determine whether BASF's coating contained the percentages of the ingredients that are set forth in those claims (A-3064).

KALIARDOS' EXPERT BYRD TESTIFIED THAT THE FULLER COATINGS DO NOT CONTAIN ALL OF KALIARDOS' CLAIMED INGREDIENTS

Byrd testified that Fuller's coatings do not contain four of the five ingredients listed in Kaliardos' claims 1 and 2 of the '530 patent. The only common ingredient is wax. He said that "Fuller doesn't have perchloroethylene" (A-3260); Fuller's coating "Does not include a

small amount of [N,N,N',N'-tetrakis(2-hydroxypropyl)-ethylenediamine]" (A-3032); and, he testified that Fuller's coating does not include a "nonionic surfactant such as nonylphenoxypoly(ethyleneoxy)ethanol" (A-3262). Byrd also testified that he did not find in Fuller's coatings "petroleum distillate *having a boiling point ranging between 350 and 380 F*" (A-3261), which the district court held was "necessary to secure the patent." (See *Kaliardos v. General Motors*, 777 F.Supp. at p. 545.) With respect to claim 2 of the '530 patent, no evidence whatsoever was presented concerning any similarity of percentages of ingredients between Fuller's coatings and the amounts of ingredients specified in claim 2.

KALIARDOS' EXPERT GEECK TESTIFIED THAT DAUBERT'S COATING DOES NOT CONTAIN ALL OF THE CLAIMED INGREDIENTS

During discovery, Daubert made available its formulations, laboratory test reports and its batch manufacturing records, which identified each of the materials and the amounts of the materials mixed together to make Daubert's coatings. Kaliardos' expert chemist, Mr. Geeck, examined these materials and testified that "[E]xcept for the wax, Daubert coating formulations are not the same as the formulations specified in the claims of either Kaliardos' '530 patent and '036 patent" (Geeck Dep., A-3322, 3324). Additionally, Mr. Geeck testified that he did not find any ethylenediamine in Daubert's coatings (A-3302, 3303); nor did he find any petroleum distillate *having a boiling point ranging between 350 and 380 F* (A-3304); he did not find any [N,N,N',N'-tetrakis(2-hydroxypropyl)ethylenediamine] (A-3305, 3306, 3311); nor did he find any neutral barium sulfonate (A-3320, 3322); nor did he find any chlorinated solvents (A-3321). No evidence was presented to show that

Daubert's coatings contain the same percentages of ingredients that are specified in the Kaliardos patent claims.

EXCLUSION OF EVIDENCE

Kaliardos' Petition, at page 39, and elsewhere, refers to evidence concerning a Pontiac Grand Prix door and a laboratory analysis of the coating taken from the door. That evidence was excluded by the magistrate because of failure to identify what the material was or where it came from. It should not have been referenced by Petitioner in his brief. To explain, Kaliardos' expert Byrd, apparently unwittingly, tested a sample piece of the hard, blue-colored, epoxy adhesive which is used within Pontiac Grand Prix doors to "glue" the bent edges of the metal door panels together. Kaliardos had that sample piece additionally tested by another laboratory in California. Upon investigations by G.M., unrefuted affidavits were submitted to the magistrate with a motion to exclude the blue-colored sample and the tests concerning it. The unrefuted affidavits identified that sample as an epoxy adhesive, not a wax coating, and established that G.M. did not use wax coatings in that particular model car (Burton Affidavit, A-1492; Cantalin Affidavit, A-1495; Mayhem Affidavit, A-1480).

During his deposition, Kaliardos' expert Byrd admitted that he had known all along, and he had told Kaliardos, that the "blue" material was not the same as the tan colored coatings-in-suit and he admitted that the material was an adhesive (Byrd, A-3254, 3256). Since the magistrate excluded that material, it should not have been included in Kaliardos' petition.

ARGUMENT AGAINST CERTIORARI

The patentee has the burden of proving infringement, either literally or under the doctrine of equivalents, by a preponderance of evidence. *Smithkline Diagnostics Co. v. Helena Laboratories Corp.*, 859 F.2d 878, 889 (Fed. Cir. 1988); *Mannesmann Demag Corp. v. Engineered Metal Products Co.*, 793 F.2d 1279, 1282 (Fed.Cir. 1986).

To prove **literal** infringement, Kaliardos must present **factual** evidence showing that every single ingredient that is specified in the asserted patent claims is actually found in the accused coatings. *Builders Concrete, Inc. v. Bremerton Concrete Products Co.*, 757 F.2d 255, 257 (Fed. Cir. 1985). To prove infringement under the **doctrine of equivalents**, Kaliardos must provide substantial **factual** evidence showing: (1) that BASF's, Fuller's and Daubert's coatings contain either the same or an equivalent of each and every ingredient that is specified in the patent claims-at-issue; **AND**, (2) that the accused coatings perform substantially the same function, in substantially the same way, to produce substantially the same results as the coating formulations specified in such patent claims. *Graver Tank & Mfg. Co. v. Linde Air Products Co.*, 339 U.S. 605, 609-10, 70 S.Ct. 854, 856-57, 94 L.Ed. 1097, 1102 (1950); *Builders Concrete, Inc. v. Bremerton Concrete Products Co.*, 757 F.2d at 258; **AND**, (3) to explain by factual, comparative, evidence how and why the accused coatings have the same function/way/results as the combination of ingredients that are specified in the patent claims. That is the controlling patent law which Kaliardos must meet in order to defeat a motion for summary judgment. *Malta v. Schulmerich Carillons, Inc.*, 925 F.2d 1320, 1327, 1329 (Fed.Cir. 1961), *cert. denied*, 119 L.Ed.2d 566 (1992). The law is well settled. *Lear Siegler, Inc. v. Sealy Mattress Co. of*

Michigan, 837 F.2d 1422, 1425-26 (Fed.Cir. 1989). *Malta, supra,* 925 F.2d at p. 1329 explains:

> ". . .substantial evidence of comparison as to the function, way and result is required as part of the patentee's prima facie case of infringement under the doctrine [of equivalents]. Therefore, if the comparison evidence is not substantial, the issue may not be submitted to the jury.
>
> We have also held that the comparison as to each *Graver Tank* element must be made 'explicitly' and 'separately.'" *Lear Siegler,* 837 at 1425-26. Consequently, a jury verdict of infringement under the doctrine can only survive a motion for JNOV if substantial evidence was presented that explicitly and separately compares the function/way/result of the accused device with the function/way/result of the claimed invention to show that they are substantially the same."

If any one of the essential elements of proof of infringement is missing, summary judgment is mandated under Rule 56(c). It is not discretionary. *Celotex Corp. v. Catrett,* 477 U.S. 317, 322-23, 91 L.Ed.2d 265, 273, 106 S.Ct. 2548, 2552 (1986):

> "In our view, the plain language of Rule 56(c) mandates the entry of summary judgment, after adequate time for discovery and upon motion, against a party who fails to make a showing sufficient to establish the existence of an element essential to that party's case, and on which that party will bear the burden of proof at trial. In such a situation, there can be 'no genuine issue as to any material fact,' since a complete failure concerning an essential element of the non-moving party's case necessarily renders all of facts immaterial. The moving

party is 'entitled to a judgment as a matter of law' because the non-moving party has failed to make a sufficient showing on an essential element of her case with respect to which she has the burden of proof."

In *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 247-48, 91 L.Ed.2d 202, 211, 106 S.Ct 2505 (1986), the Court stated the standard for summary judgment:

"Rule 56(c) of the Federal Rules of Civil Procedure provides that summary judgment 'shall be rendered forthwith if the pleadings, depositions, answers to interrogatories and admissions on file, together with the affidavits, if any, show that there is no genuine issue as to any material fact and that the moving party is entitled to a judgment as a matter of law.

. . .

By its very terms, this standard provides that the mere existence of *some* alleged factual dispute between the parties will not defeat an otherwise properly supported motion for summary judgment; the requirement is that there be no *genuine* issue of *material* fact. [emphasis in original]

. . .

As to materiality, the substantive law will identify which facts are material. Only disputes over facts that might affect the outcome of the suit under the governing law will properly preclude the entry of summary judgment. **Factual disputes that are irrelevant or unnecessary will not be counted.** [emphasis added]

. . .

[T]here is no issue for trial unless there is sufficient evidence favoring the non-moving party for a

jury to return a verdict for that party. 477 U.S. at 249.

. . .

[T]he standard for summary judgment mirrors the standard for a directed verdict under Fed. R. Civ. P. 50(a). 477 U.S. at 250."

THE QUESTIONS PRESENTED FOR REVIEW BY APPELLANT KALIARDOS UNDER RULE 14.1(a)[11]

"1. Did the magistrate-judge in the trial court err in holding that the evidence produced by Plaintiff in response to Defendant's motion for summary judgment did not create a genuine issue of material fact concerning whether accused products infringed asserted claims, either literally or under the doctrine of equivalents, such as to require a full trial?"

It is clear that there was no genuine issue of material fact concerning the motions for summary judgment. There cannot be a genuine issue of material fact where the non-moving party, Kaliardos, failed to present some of the essential evidence to show literal infringement (i.e., the presence of every single claimed ingredient in the accused products) or infringement under the doctrine of equivalents (i.e., evidence of the presence of equivalent ingredients *AND* showing substantially similar function/way/results with explanations as to how and why). Hence, there was no error by the district court or the court of appeals which warrants the grant of certiorari. *Intellicall, Inc. v. Phonometrics Inc.*, 952 F.2d 1384, 1389 (1992) (summary judgment of non-infringement

---

[11] **Note, the argument headings are reproductions of Kaliardos' four "Questions Presented for Review" in his Petition for Writ of Certiorari.**

properly granted where patentee failed to produce evidence of equivalency).

"2. Did the trial judge in the trial court err in adopting the "Report and Recommendation" of the magistrate-judge and dismissing Plaintiff's action on the merits and by abusing his discretion in denying Plaintiff's motion for leave to supplement his responses with a test report of his expert and/or in not granting Kaliardos' request for an oral hearing?"

The district judge stated that, "pursuant to 28 USC 636(b)(1)(B), Fed. R. Civ. Pr. 72(b), he conducted a de novo review of the magistrate's "Report and Recommendation," which found that Kaliardos lacks essential evidence. There is no showing as to exactly where or how he committed error in so doing.

Moreover, there was no abuse of discretion in denying Plaintiff's motion to supplement his responses with a test report which was untimely and not verified and, therefore, not in accordance with Rule 56(e). The court properly relied upon *Adickes v. S. H. Kress & Co.*, 398 U.S. 144, 158 n. 17 (1970) and *Fowle v. C&C Cola*, 868 F.2d 59, 67 (3rd Cir. 1989), which states:

> ". . .There was no compliance [by the expert's report] with Rule 56 (e) . . . the substance of the report was not sworn to by the alleged expert, therefore, the purported expert's report is not competent to be considered on a motion for summary judgment. See *Adickes v. S. H. Kress & Co.*, 398 U.S. 144, 158, 158 n.17, 90 S.Ct. 1598, 1608 n. 17, 26 L.Ed. 142 (1970) ('unsworn statement does not meet the requirements of Fed. Rule Civ. P. 56(e)')."

Further, there was no abuse of discretion in not granting Kaliardos' request for another oral hearing before

deciding the motions for summary judgment. Kaliardos had an oral hearing before the magistrate; he was not entitled to another oral hearing before the district judge. That question was definitively addressed in *United States v. Raddatz*, 447 U.S. 667, 673-74, 65 L.Ed.2d 424, 432-3, 100 S.Ct. 2406 (1980). Referring to 28 U.S.C. 636(b)(1)(B), *Raddatz* states that the district judge is required to "make a de novo determination of those portions of the [magistrate's] report or specified proposed findings or recommendations to which objection is made." And, "It should be clear that on these dispositive motions, the statute calls for a de novo determination, not a de novo hearing." Then *Raddatz* quotes from the House Report, H.R. Rep. No. 94-1609 (1976):

> The use of the words *'de novo determination'* is not intended to require the judge to actually conduct a new hearing on contested issues.

Raddatz summarizes:

> . . . . in providing for a *'de novo determination'* rather than a de novo hearing, Congress intended to permit whatever reliance a district judge, in the exercise of sound judicial discretion, chose to place on a magistrate's proposed findings and recommendations."

"3. Did the appeal court err in affirming the district court's dismissal of Plaintiff-Appellant's case concerning the evidence Kaliardos offered and the plain language and historical intent of the application of Federal Rule 56?"

The appeals court affirmed the district court's summary judgment dismissal because of the absence of essential evidence of infringement. As this Court stated in

Matsushita Electric Industrial Co., Ltd. v. Zenith Radio Corporation, 475 U.S. 574, 586-7, 89 L.Ed.2d 538, 552, 106 S.Ct. 1348 (1986):

> "When the moving party has carried its burden under Rule 56 (c), its opponent must do more than simply show that there is some metaphysical doubt as to the material facts.
>
> . . .
>
> In the language of the Rule, the nonmoving party must come forward with specific facts showing that there is a genuine issue for trial."

Kaliardos made no such showing. Hence, there was no error in affirming the dismissal.

"4. Is the federal judiciary using Rule 56 to rid their dockets of difficult cases and/or litigants and, if so, will such use of Rule 56 be allowed to continue?"

Kaliardos misinterprets the purpose of Rule 56. The purpose is to rid the dockets of factually unsupported claims. Pertinent here is this Court's statements in *Celotex supra:*

> "One of the principal purposes of summary judgment rule is to isolate and dispose of factually unsupported claims or defenses, and we think that it should be interpreted in a way that allows it to accomplish this purpose (477 U.S. at 373)
>
> . . .
>
> The Federal Rules of Civil Procedure have for almost 50 years authorized motions for summary judgment upon proper showings of the lack of a genuine, triable issue of material fact. Summary judgment procedure is properly regarded not as a

> disfavored procedural shortcut, but rather as an integral part of the Federal Rules as a whole, which are designed 'to secure the just, speedy and inexpensive determination of every action.'
>
> . . .
>
> Rule 56 must be construed with due regard not only for the rights of persons asserting claims and defenses that are adequately based in fact to have those claims and defenses tried to a jury, but also for the rights of persons opposing such claims and defenses to demonstrate in the manner provided by the Rule, prior to trial, that the claims and defenses have no factual basis." (477 U.S. at 327)

This present lawsuit is utterly without factual foundation. This is the very kind of case for which summary judgment has been designed.

CONCLUSION

Respondents General Motors, BASF and Fuller respectfully ask this Court to deny Kaliardos' Petition for Writ of Certiorari.

Respectfully submitted,

HERBERT FURMAN
29709 Deer Run
Farmington Hills,
Michigan 48331
Attorney for Respondent-Defendant General Motors Corporation

BERNARD J. CANTOR
(Counsel of Record)
MICHAEL P. BRENNAN
ROBERT S. NOLAN
HARNESS, DICKEY & PIERCE, P.L.C.
5445 Corporate Drive
Troy, Michigan 48098
(810) 641-1600
(810) 641-0270 (FAX)
Attorneys for Respondents-Defendants General Motors Corporation, BASF Corporation, H.B. Fuller Company, H.B. Fuller Automotive Products, Inc.

April 20, 1995

APPENDIX A

Magistrate's "Report and Recommendation"

[Filed Oct 7 '93]

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF MICHIGAN
SOUTHERN DIVISION – FLINT

Civil No. 88-CV-73729-DT

NICOLAS KALIARDOS,

Plaintiff,

vs.

GENERAL MOTORS CORPORATION, BASF CORPORATION, DAUBERT INDUSTRIES, INC., H.B. FULLER COMPANY and H.B. FULLER AUTOMOTIVE PRODUCTS, INC.,

Defendants.

HON. PAUL V. GADOLA
HON. MARC L. GOLDMAN

REPORT AND RECOMMENDATION

This is an action claiming infringement of certain claims of United States Patents 4,959,530 ['530] and 4,356,036 ['036]. The defendants in this action are General Motors [GM] and three companies which supplied General Motors with anti-corrosive coatings for use on its automobiles, BASF Corporation, Daubert Industries, Inc., and H.B. Fuller Company. The pertinent facts are as follows.

BACKGROUND

In the late 1960's and early 1970's, the plaintiff, Nicholas Kaliardos, was engaged in the dry cleaning business. Sometime around 1971, Kaliardos began experimenting with the chemicals used in his dry cleaning business in an effort to develop an anti-corrosion wax coating for use on automobiles. He began this experimentation after being told that the Fisher Body Division of General Motors was looking for a coating for bare steel that would withstand salt spray. In the period between 1972 and 1981, Kaliardos submitted several samples of his products to the Fisher Body Corrosion Laboratory for testing. After each test, Fisher Body reported that the product did not meet GM Material Specification 998-1128. However, Kaliardos was never shown the test results. Curious about the performance of his product and suspicious of the conclusory test reports from Fisher Body, Kaliardos submitted his creations to independent laboratories for testing. Kaliardos claims that the results of these independent tests revealed that his coatings met GM's anti-corrosion requirements.

In 1974, Kaliardos submitted an anti-corrosion coating invention to the Patent and Trademark Office [PTO]. The Patent Office Examiner initially objected to the broad language in the proposed claims, and Kaliardos modified those claims to specifically define several of the terms. On May 25, 1976, Kaliardos was granted U.S. Patent 3,959,530 [The '530 patent]. Claim 1 to the '530 patent reads:

> A cleaning and protective coating composition consisting essentially of a mixture of:
>
> wax residue such as paraffin and microcrystalline wax, *perchloroethylens*, petroleum distillate *having a boiling point ranging between 350 degrees and*

380 degrees F. and a nonionic surfactant, such as nonylphenoxypoly (ethyleneoxy) ethanol, and a small amount of [N,N,N', N'-tetrakis (2-hydroxy-propyl) ethylenediamine].[1]

In both the patent application and an affidavit filed in connection with this case, Kaliardos explained the function of the various ingredients of his coating. The wax residue is waterproof and remains pliable in both cold and hot weather. Petroleum distillate, recommended as Solvent 140 in the patent language, acts as a carrier for the other ingredients, dissolving the wax once the wax is heated. The coating spreadability is improved by the surfactant, and the coating adheres better to the metal car body once the chelating agent is added. Finally, and most importantly according to Kaliardos, the perchloroethylene dissolves any oil remaining on the metal. This chlorinated solvent cleans the car body, helping the other coating materials to stick to the bare surface. "Sagging" had been a prevalent problem with other coatings, and Kaliardos claims that he eliminated sagging and flaking problems when he began using perchloroethylene in his experiments. Perchloroethylene was commonly used as a spot remover in the dry cleaning industry.

After receiving the '530 patent, Kaliardos began experimenting with weldable zinc and anti-corrosive coatings. He continued submitting his coatings for testing at the Fisher Corrosion Lab. In 1978, General Motors amended Material Specification 998-1128, and began requiring aluminum pigment, hydrocarbon resins, and a petroleum solvent in its anti-corrosion coatings. Kaliardos

---

[1] **The underlined portions of the language indicate the changes that were made at the direction of the patent office in order to secure the patent.**

added aluminum to his coating to meet GM Material Specification 998-1128.

On October 26, 1982, Kaliardos was granted a patent for a new formula containing zinc or aluminum. Claim 1 to U.S. Patent No. 4,356,036 [the '036 patent] reads:

> An anti-corrosion coating composition comprising:
>
> a mixture of aluminum paste or zinc paste containing aluminum or zinc flakes and a solvent, microcrystalline wax, aromatic hydrocarbon resin *having a softening point, R and B, of 70C. - 140C.*, chlorinated rubber *having a combined chlorine content of at least 66%*, neutral barium sulfonate, chlorinated solvent, aromatic hydrocarbon solvent, and mineral spirits.

In the patent language, Kaliardos recommends using perchloroethylene as the chlorinated solvent and using toluene and xylene as the aromatic hydrocarbon solvents. Ingredients that were not part of the '530 patent, but were included in the '036 patent, include chlorinated rubber and aluminum or zinc paste. According to Kaliardos, he added the chlorinated rubber because it has a high resistance to acids and alkalies. He stated that without the ingredient, the coating would not pass the GM detergent test listed in the material specifications. The aluminum paste provided a silver pigment for the coatings and also forms a protective finishing layer over the other ingredients. Aluminum is apparently more effective than zinc because less of the material is required.

For many years prior to 1979 and continuing to the present, General Motors has used wax-type coatings to prevent corrosion on the inside surfaces of its auto-

mobiles.[2] Defendants BASF, Daubert, and Fuller, are among the several companies that supply GM with wax-type anti-corrosion coatings. BASF claims that it has manufactured an anti-corrosion coating since the 1960s, based on Canadian Patent 743,631 issued to Rebecca Sandretto, a former employee of a predecessor company, in 1966. Daubert has supplied GM with coatings since 1979. Fuller was not organized until August 1988, when it bought certain assets of the Widger Chemical Co., and the company has supplied coatings to GM since its inception.

In early 1980, before Kaliardos obtained the '036 patent, the Fisher Corrosion Lab notified Kaliaros that after seven years of testing his anti-corrosion products, they were discontinuing any further testing because none of Kaliardos' products had met GM's specifications. However, Fisher Body apparently relented and tested another coating. In an October 23, 1980 letter, Fisher Body informed Kaliardos that his aluminized sample did not meet the requirements of Specification 998-1128. Kaliardos was directed to make no further submissions.

In late 1982 or early 1983, after obtaining the '036 patent, Kaliardos contacted General Motors and began claiming that the anti-corrosion coatings provided by their suppliers and used on their vehicles infringed both his '036 and '530 patents. Kaliardos claimed that GM had directed its suppliers to manufacture coatings based on the samples and formulas that Kaliardos had provided for testing.

---

[2]Other automakers were using an "oily wax" as early as 1975, but the thickness of the early coatings caused problems on the assembly line.

On September 14, 1988, after years of correspondence and testing, Kaliardos filed a complaint in the United States District Court for the Eastern District of Michigan, charging General Motors and BASF with patent infringement. In February 1990, Kaliardos added four other suppliers as defendants, including Daubert and H.B. Fuller.[3]

In 1991, after a lengthy period of discovery, the defendants filed motions for summary judgment. They asserted that plaintiff had failed to establish that the defendants had infringed his two patents either literally or under the doctrine of equivalents. In response to this motion, plaintiff submitted the affidavit of his expert, David Byrd, which purportedly established that the products used by GM and manufactured by the defendant did infringe plaintiff's patents. Because the affidavit contained information which contradicted testimony Byrd had given previously in depositions, a new round of discovery began.

Following completion of this new round of discovery, new motions for summary judgment were filed by the defendants. In response to these motions, plaintiff agreed to modify his claims. Plaintiff conceded that the coatings manufactured by BASF, Fuller, and Daubert do not literally infringe any of the claims of the '530 patent. He further conceded that the coatings of the above-named defendants do not infringe claims 3, 4, 5, and 6 of the '530 patent under the doctrine of equivalents. Thus, plaintiff continues to assert that GM has infringed all

---

[3]Two of these new defendants, Beazer East Inc., and National Starch & Chemical Corporation, were granted summary judgment in a memorandum opinion and order entered by the Honorable Paul V. Gadola. *Kaliardos v. General Motors Corp.*, 777 F.Supp. 543 (E.D. Mich. 1991).

claims of the '530 patent, both literally and under the doctrine of equivalents, and that the rest of the defendants have infringed only claims 1 and 2 of the '530 patent under the doctrine of equivalents.

With respect to the '036 patent, plaintiff conceded that the Fuller coating does not infringe that patent under either theory. He also conceded that the BASF and Daubert coating do not literally infringe claims 2, 3, 4, and 7 of the '036 patent and, further, that they do not infringe claim 7 of the '036 patent under the doctrine of equivalents. Finally, plaintiff conceded that Daubert coating Nox-Rust X-170 does not infringe the '036 patent at all. An order granting summary judgment on these claims was entered by United States District Judge Paul V. Gadola on October 19, 1992.

As a result of this order, the following claims remain against each defendant:

1. BASF—Infringement under the doctrine of equivalents of claims 1 and 2 of the '530 patent. Literal infringement of claims 1, 2 and 7 of the '036 patent. Infringement under the doctrine of equivalents of claims 1-6 of the '036 patent.
2. DAUBERT—Infringement of claims 1 and 2 of the '530 patent under the doctrine of equivalents. Literal infringement of claims 1, 5 and 6 of the '036 patent. Infringement under the doctrine of equivalents of claims 1-6 of the '036 patent.
3. FULLER—Infringement of claims 1 and 2 of the '530 patent under the doctrine of equivalents.
4. GENERAL MOTORS—The claims against GM are derivative of those against the suppliers because GM is named as a user of the accused products. There is also an allegation that GM may have infringed the patents by adding chemicals to the

coatings after they had been delivered by the suppliers.

The defendants are requesting summary judgment with respect to each of these claims.

LEGAL PRINCIPLES

Rule 56(c) of the Federal Rules of Civil Procedure provides that summary judgment shall be granted if there is no genuine issue of material fact. The burden is first on the moving party to show that there is an absence of evidence to support the non-moving party's case. *Celotex Corp. v. Catrett*, 477 U.S. 317, 322 (1986); *Hines v. Joy Manuf.*, 850 F.2d 1146, 1149-50 (6th Cir. 1988); *Gregg v. Allen-Bradley Co.*, 801 F.2d 859,861 (6th Cir. 1986). Once the moving party presents sufficient evidence to support the motion, the burden shifts to the adverse party to set forth facts showing a genuine triable issue. *Fed.R.Civ.P.* 56(e); *Gregg*, 801 F.2d at 861.

Summary judgment should be granted against a party who fails to make a showing sufficient to establish the existence of an element essential to that party's case. *Celotex Corp. v. Catrett*, 477 U.S. at 325. In deciding the question, the court must bear in mind the quantum and quality of proof necessary to support liability at trial. The standard mirrors that governing a directed verdict under Federal Rule of Civil Procedure 50(a). The inquiry under each is the same: Whether the evidence presents a sufficient disagreement to require submission to a jury, or whether it is so one-sided that one party must prevail as a matter of law. *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 251-52 (1986). The nonmovant "must do more than simply show that there is some metaphysical doubt as to the material facts."

Matsushita Elec. Indus. Co. v. Zenith Radio Corp., 475 U.S. 574, 586 (1986). If the evidence put forward by the non-moving party is merely colorable, or is not significantly probative, summary judgment may be granted. *Id.* Similarly, speculation or hypothesis is not sufficient to create a genuine issue of material fact. *Boddy v. Dean*, 821 F.2d 346, 349 (6th Cir. 1987). With this standard in mind, I now turn to the legal principles which control in this case.

In his decision granting National Starch and Beazer's motions for summary judgment, Judge Gadola outlined the law of patents which is applicable to the case. *Kaliardos v. General Motors Corp.*, 777 F.Supp. 543 (E.D. Mich. 1991). Because this is the "law of the case" which must be followed in this report and recommendation, I will repeat it here.

> A patent is a federal statutory grant under 35 U.S.C. §101. The patent, to be protected, must comport with certain statutory requirements. Section 112 of Title 35 states in relevant party that:
>
> > [A patent] specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
>
> 35 U.S.C. §112. The Federal Circuit has stated that "[t]he claims alone delimit the right to exclude; only they may be infringed." *Environmental Instruments Inc. v. Sutron Corp.*, 887 F.2d 1561, 1564 (Fed.Cir. 1989).
>
> In patent law, every element of the claim must be found in the accused product—either actually or by a substantially equivalent element—in order to find an infringement.

> [W]here the respondent in constructing his [product] omits one of the ingredients of the complainant's combination, he does not infringe the complainant's patent.

Pennwalt Corp. v. Durand-Wayland, Inc., 833 F.2d 931, 950 (Fed.Cir. 1987) [Nies, J., concurring], *cert. denied*, 485 U.S. 961, 1009, 108 S.Ct. 1226, 1474, 99 L.Ed.2d 426 (1988); *see also Lemelson v. United States*, 752 F.2d 1538, 1551 (Fed. Cir. 1985) ["the plaintiff must show the presence of every element or its substantial equivalent in the accused (product)"].

> Thus, the accused infringer . . . is entitled to summary judgement, on the ground of non-infringement, by pointing out that the patentee failed to put forth evidence to support a finding that [an element] of the asserted claim was met by the . . . accused [product]. *Johnston*, 885 F.2d at 1578.

Infringement may be shown in only two ways. First, if every single element of limitation in the claim is found in the accused product, there is *literal infringement. See Builders Concrete, Inc. v. Bremerton Concrete Produs. Co.*, 757 F.2d 255, 257 (Fed.Cir. 1985). Second, infringement can occur where the accused product has corresponding elements which perform substantially the same function in substantially the same way to obtain the same result. *See Graver Tank Co. v. Linde Air Prods. Co.*, 339 U.S. 605, 609-10, 70 S.Ct. 854, 856-57, 94 L.Ed. 2d 1097 (1950); *Builders Concrete*, 757 F.2d at 258. This second path to infringement is called the doctrine of *equivalents.*

The doctrine of equivalents will not extend to allow the patentee to recapture through equivalence certain coverage given up during prosecution of his

patent application. *See Pennwalt*, 833 F.2d at 934, n.1. Therefore, the language changed by the plaintiff in securing his patents is critical if the doctrine of equivalents infringement is pursued. This limitation is called *prosecution history estoppel.*

> Prosecution history estoppel, which precludes a patentee from obtaining a claim construction that would resurrect subject matter surrendered during prosecution of his patent application . . . limits a patentee's reliance on the doctrine of equivalents.

Builders Concrete, 757 F.2d at 258; *see also Jonsson v. Stanley Works*, 711 F.Supp. 1395, 1403 (N.D. Ohio 1989) ["Arguments and remarks made by plaintiff's counsel during prosecution of the patent application can also be used to determine the scope of the claims"], *aff'd.*, 903 F.2d 812 (Fed.Cir. 1990). Finally, a claimant may not "broaden his claim by dropping [an] element which he was compelled to include in order to secure his patent." *I.T.S. Rubber Co. v. Essex Rubber Co.*, 272 U.S. 429, 443, 47 S.Ct. 136, 141, 71 L.Ed. 335 (1926).

In view of the issues remaining in this case, it is necessary to note in greater detail what is required of a plaintiff who is alleging infringement under the doctrine of equivalents. In *Lear Siegler, Inc. v. Sealy Mattress Co. of Michigan*, 873 F.2d 1422 (Fed. Cir. 1987), the court recognized that under *Graver Tank*, infringement under the doctrine of equivalents does not require complete identity for every purpose and in every respect, but does require substantial identity of the function performed, means by which the function is performed, and the result achieved. 873 F.2d at 1425. This substantial identity must be proven with respect to all three of these elements. As stated in *Lear Siegler*, 873 F.2d at 1425-26

[relying on *Nestier Corp. v. Menasha Corp.-Lewisystems Div.*, 729 F.2d 1576, 1579-80 (Fed.Cir. 1984)]:

> The party asserting infringement must present "*evidence* and *argument* concerning the doctrine and *each* of it *elements*" (emphasis added). The evidence and argument on the doctrine of equivalents cannot merely be subsumed in plaintiff's case of literal infringement.
>
> * * *
>
> Absent the proper *Graver Tank* context, i.e., a showing of how plaintiff compares the function means and result of its claimed invention with those of the accused device, a jury is more or less put to sea without guiding charts when called upon to determine infringement under the doctrine . . . [*N*]*estier* requires that the three Graver Tank elements must be presented in the form of particularized testimony and linking arguments.

In *Lear Siegler*, the court found that there was no testimony broken down into the three *Graver Tank* elements as required by *Neistier*. Additionally, the court found that there was no argument linking the evidence elicited to the three elements of equivalence doctrine. The court therefore concluded that it has been error to submit the matter to the jury and that a judgment notwithstanding the verdict should have been granted. *Lear Siegler*, 873 F.2d at 1427.

The same analysis was utilized by the Federal Circuit in *Malta v. Schulmerich Carillons, Inc.*, 952 F.2d 1320 (Fed. Cir. 1991). In *Malta*, the court found that in the absence of "particularized testimony and linking argument as to each of the function/means/result prongs of the tripartite *Graver Tank* equivalency test," infringement under the doctrine of equivalents may not be found. *Id.* at 1327.

This type of analysis is equally applicable in motions for summary judgment. First, it must be noted that the same summary judgment standard is applied to patent claims as applied to other types of claims. *Avia Group Int'l. v. L.A. Gear California, Inc.*, 853 F.2d 1557, 1561 (Fed. Cir. 1988). In *London v. Carson Pirie Scott & Co.*, 946 F.2d 1534, 1536 (Fed. Cir. 1991), the court recognized that there can be no genuine issue of material fact where a party has failed to adduce proof to meet an essential part of the applicable legal standard. The court applied this principle in determining whether the plaintiff had created an issue of fact as to whether the defendant infringed plaintiff's patent under the doctrine of equivalents. The court found that in order to survive summary judgment, the plaintiff would be required to present some evidence showing that the defendant's product performed substantially the same function in substantially the same way to achieve substantially the same result. The absence of evidence on any one of these three elements would warrant a grant of summary judgment with respect to the claim of infringement. 946 F.2d at 1539-40. This standard is equally applicable to the case at bar.

In finding that there existed no genuine issue of material fact as to whether National Starch and Beazer infringed either of these two patents, the court stated that Kaliardos had failed to present any evidence showing that the ingredients used in these two defendants' products contained any one of the elements of plaintiff's claims. The court went on to note that, in prosecuting his patents, plaintiff had made changes in his applications in order to secure the patent. In the '530 claim, plaintiff had modified the coating so as to require a) perchloroethylene and b) petroleum distillate having a boiling point ranging between 350 degrees and 380 degrees

Fahrenheit. In the '036 patent, claim 1 was modified to require a) aromatic hydrocarbon resin having a softening point, R and B of 70C.-140C, and b) chlorinated rubber having a combined chlorine content of at least 66%.

The court went on to find that, in order to have literal infringment of claim 1 of the '530 patent, the challenged product would have to contain perchloroethylene, a nonionic surfactant and [N.N.N.',N'-tetrakis (2-hydroxypropyl) ethylenediamine]. In order for there to be infringement by equivalents of claim 1 of the '530 patent, the challenged substance would have to contain perchloroethylene.

For there to be literal infringement of claim one of the '036 patent, the accused substance would have to contain mixtures of aluminum paste or zinc paste or equivalent mixtures, aromatic hydrocarbon resins having softening points, R and B, of 70 degrees C.-140C., chlorinated rubber having chlorine content of at least 66% and aromatic hydrocarbon solvents or chlorinated solvents. In order for there to be infringement by equivalents of the '036 patent, the aromatic hydrocarbon resins and chlorinated rubber with chlorine content of at least 66% was considered essential. These findings by Judge Gadola are applicable to this report under the law of the case doctrine and will be applied here. *See Griffin v. MDOC*, No. 91-1523, 1993 U.S. App LEXIS 24392 (6th Cir. September 23, 1993).[4]

---

[4]While the law of the case doctrine is generally applied to decisions of a lower court that have been decided on appeal, the doctrine would seem to be applicable in this case, where a district judge has made findings on issues later presented to a magistrate judge.

ANALYSIS

Plaintiff's responses to the motions for summary judgment are difficult to analyze because his claims have evolved over time. Indeed, his factual and legal arguments have evolved greatly since the court's decision on the Beazer and National Starch motions. Analysis is further complicated by the fact that the evidence put forward by the plaintiff is inconsistent in the sense that tests performed on the same substances over a period of years have produced differing results. This has resulted in conflicting affidavits being filed by plaintiff's primary expert, David Byrd.

In analyzing the evidence in this case for the purpose of resolving the motions for summary judgment, the court must be mindful of the nature of the evidence presented by the opposing parties. The defendants have submitted affidavits, deposition testimony, and documents showing that the products that they were producing and selling to GM did not infringe upon plaintiff's products either literally or under the doctrine of equivalents.

In response, the plaintiff and his expert have analyzed what they believed were sealants from six GM car doors selected at random from a junkyard to determine whether the sealants in those cars infringed on plaintiff's patents. Unfortunately, plaintiff's inability to identify the materials tested, their confusion over the cars from which the doors were taken, and their inability to identify the producers of the particular sealants found on the doors have increased the difficulty in evaluating the evidence.

The best that can be said for plaintiff's evidence in opposition to the motions for summary judgment is that it is muddled and difficult to comprehend. In light of this

state of the record, I believe that the clearest way to analyze whether there exists a genuine issues of fact for trial is to examine the remaining allegations against each defendant individually to determine what, if anything, remains as a legitimate factual issue requiring jury determination.

BASF

As noted above, plaintiff claims that BASF's S51Z001 wax coating has infringed claims 1 and 2 of the '530 patent under the doctrine of equivalents and has infringed the '036 patent both literally and under the doctrine of equivalents. BASF claims that it has used a single anti-corrosion coating formula, which it has occasionally altered, since the early 1960's. As of September 3, 1976, the formulation for BASF's S51Z001 wax coating was listed as follows:

VM&P Naptha—54.66%
Mineral Spirits—7.79%
High melting point wax—.60%
Petroleum hydrocarbon resin—23.39%
Aluminum flake powder—2.12%
Microcrystalline wax—11.44%

Sometime prior to January 31, 1984, hydrocarbon resin was substituted for petroleum resin, and leafting aluminum flake paste was substituted for leafing aluminum powder. BASF substituted No. 2429 Naphtha for VM&P Naphtha in May 1982, but switched back to the VM&P Naphtha in August 1982. The aluminum paste used by BASF includes trace amounts of stearic acid, which can act as both a surfactant and a chelating agent.

According to BASF, the formula is based on a patent for an anti-corrosion coating issued in Canada to Rinshed-

Mason Company[5] employee, Rebecca Sandretto. The Sandretto patent lists as ingredients: Microcrystalline wax, a hydrocarbon solvent [VM&P Naphtha is recommended], pigment [Aluminum, iron and other metals are suggested], and a petroleum resin [petroleum resin is a hydrocarbon resin].[6]

In November 1984, GM provided Kaliardos with a can of a liquid sample of BASF's coating for testing. Chemical Industrial Services, Inc. [CIS] tested the sample, and in a report dated January 29, 1985, CIS stated that the sample did not contain perchloroethylene, which is necessary for infringement of the '530 patent. The test also failed to disclose the presence of chlorinated solvent or chlorinated rubber, which would be necessary for infringement of the '036 patent. The test also found Naphtha, which is primarily an aliphatic solvent, rather than an aromatic hydrocarbon solvent. VM&P Naphtha will not dissolve Parlon, the chlorinated rubber suggested by Kaliardos in the '036 patent. Byrd Dep. pp. 134-135.

On May 8, 1988, David Byrd submitted results from a test conducted on the same sample of BASF coating. The test results showed a quantity of less than 5% perchloroethylene or other chlorinated solvents. However, Byrd later testified that this finding was the equivalent of no detection at all. The test also did not detect chlorinated rubber.

In October 1989, David Byrd again tested a sample of BASF coating on different machinery and issued the following findings concerning the substances contained in the coating:

---

[5]It appears that Rinshed-Mason was purchased by Inmont Corporation, which itself was later purchased by BASF.

[6]Exhibt 15, Defendants' Motion for Summary Judgement.

Microcrystalline wax–present
Hydrocarbon resin–present
Chlorinated rubber–present
Aluminum–present
Zinc–not detected
Barium–present trace
Surfactant–present
Perchloroethylene–present

On January 2, 1990, Kaliardos gave Clayton Environmental Consultants a sample of the same BASF coating and a sample of sealant allegedly taken from the doors of a 1983 Oldsmobile Ciera. Gas chromatrography/mass spectrometry tests performed at Clayton's Novi laboratory detected aromatic compounds in both samples, but did not detect tetrachloroethane.[7] Clayton then sent a sample to their Windsor laboratory for static headspace analysis by gas chromatography using an electron capture detector [GC/ECD]. The presence of a very small amount of tetrachloroethane was detected by the test.[8] Finally, on October 19, 1992, mere days before the motion for summary judgment was argued, Mr. Byrd submitted another affidavit stating that further tests on the BASF

---

[7]Tetrachloroethane is another name for perchloroethylene.

[8]There is some question as to what was actually tested at the Windsor laboratory. According to Daryl Strandbergh, the director of the Novi lab, he sent over a liquid material in a sealed test tube to Windsor. This would indicate that the material sent was from the sample submitted by GM. Paul Epstein, the director of the Windsor lab testified that the substance that was tested was solid and gummy in texture which would seem to indicate that it was the sample taken from the Ciera. The chemist conducting the test, Paul Johnson later filed an affidavit stating that the substance that he tested was a liquid, rather than a solid substance. The defendant's motion to strike all of these affidavits, because of the inability to identify the substance tested, was denied.

liquid material disclosed the presence of 1,1 dichloroethene and certain aromatic solvents.

BASF has submitted the affidavit and deposition of Tommie Bemis, who formulated the BASF product for 23 years. He stated that BASF has never used perchloroethylene, any other chlorinated solvent, chlorinated rubber, zinc, or neutral barium sulfate in its product. BASF has also submitted the affidavit of Rebecca Sandretto, the holder of the Canadian patent on the BASF product who states that her invention did not contain perchloroethylene. Finally, BASF relies on the CIS tests which revealed no perchloroethylene in the substance.

To the extent that plaintiff asserts that the BASF product literally infringes the '036 patent, I must conclude that the defendant is entitled to summary judgment. In order for there to be a literal infringement of claim 1 of the '036 patent, every single element of limitation must be found in the accused product. The '036 patent requires that there be, among other ingredients, neutral barium sulfonate. Here, even assuming that perchloroethylene was contained in the BASF product as found in some of plaintiff's tests, there is simply no evidence of any neutral barium sulfonate. Indeed, Mr. Byrd testified that while he did detect some barium in one of his tests, he never tested for neutral barium sulfonate. In the absence of any evidence of the presence of this required element of claim 1 of the '036 patent, it cannot be said that the plaintiff has met his burden of showing a genuine issue of fact with respect to literal infringement. Accordingly, summary judgment on this claim should be granted to BASF.[9]

---

[9] Even if it could be said that there was sufficient evidence to create a genuine issue of fact on the claim of literal infringement of

[footnote continued]

The question of whether there exists a genuine issue of fact on the claim of infringement by equivalents of both patents revolves around the *Graver Tank* function/way/result analysis. As noted earlier, the Federal Circuit requires that there be explicit testimony and linking argument substantiating all three aspects of equivalency. *Lear Siegler*, 873 F.2d at 1425-26. Here, there is no such testimony. Indeed, when specifically asked whether any of the defendants products perform substantially the same function in substantially the same way to produce substantially the same results as plaintiff's two patents, Mr. Byrd testified that he had no evidence to support that conclusion. Indeed, he stated that he did not conduct any tests on any of the defendants' products to determine how their ingredients work in combination or whether they work the same way as plaintiff's products. In the absence of any evidence that the *Graver Tank* elements have been met in this case, BASF is also entitled to summary judgment on the claims of infringement of both the '036 and '530 patents under the doctrine of equivalents.[10]

DAUBERT

Daubert began developing a wax-type anti-corrosion coating in 1975, and they first started selling a product formulated to meet GM Specification 998-1128 in

---

the '036 patent, there is no evidence that the components of the accused product meet the percentage requirements of the second claim of that patent.

[10]BASF and General Motors have also asserted that plaintiff's patents are invalid under 35 U.S.C. §102(b) since the "infringing" product was sold by BASF and used by General Motors more than one year before the dates of Kaliardos' patent applications. In view of my recommendation, this issue does not need to be resolved.

February 1979. Since 1979, Daubert has produced three different wax-type anti-corrosion formulas. NOX RUST X-151, which was used by the company from 1979 until 1986, combines:

Microcrystalline wax—16-21%
Polyethylene wax—.6-.8%
Hydrocarbon resin—14.5-16.5%
Lead sulfonate—.4-.6%
Colloidal silica—.7-1.2%
Aluminum paste—1.0-2.0%
VM&P Naphtha—6.2-59.0%

In 1986, the company discontinued manufacture of NOX RUST X-151 and started manufacturing a product without aluminum to meet GM Material Specification 998-2250, which was issued in 1983 and calls for a clear coating. This product, NOX RUST X-170,[11] combines:

Hydrocarbon resin—29.8-34.5%
Barium sulfonate—1.8-2.1%
Petroleum oil—6-7%
VM&P Naphtha—41.5-42.5%
Caster oil derivative—.5-1.6%
Colloidal silica—.4-1.5%
Petrolatum wax—8.5-10.5%
Microcrystalline wax—7.0-10.7%

Plaintiff contends that the NOX-RUST X-151 infringes the '530 patent under the doctrine of equivalents and the '036 patent both literally and under the doctrine of equivalents. He further contends that NOX-RUST X-170 infringes the '530 patent under the doctrine of equivalents. In support of this claim, plaintiff relies solely on

---

[11] Daubert discontinued production of the NOX RUST X-170 in 1990 and began using NOX RUST X-175. The X-175 formula is not alleged to be infringing either of the patents.

tests conducted on the door of a 1984 Buick Skylark which he believes contained a Daubert sealant. Tests on that door detected chlorinated rubber and solvents but also detected zinc and no aluminum. A trace of perchloroethylene was also detected.

Defendants have submitted the results of tests conducted by the Shrader Laboratory on its door coatings which show that its coatings do not contain any chlorinated solvents. They also contend that plaintiff has failed to establish that the Skylark door contains any sealant manufactured by Daubert.

As noted above, the uncontested evidence shows that NOX-RUST X-170 was not manufactured until 1986. Daubert therefore contends that whatever is on the 1984 Skylark cannot be X-170. Daubert further notes that the test of the Skylark door disclosed zinc, but not aluminum. The uncontested evidence shows that NOX-RUST X-151 did not contain zinc, but did contain aluminum.

Because the Skylark was manufactured before 1986, the material on the door cannot be NOX-RUST X-170. Because the sealant contains zinc, but no aluminum, it cannot be NOX-RUST X-151. Thus, there is no evidence in this record to suggest that these Daubert sealants infringed plaintiff's patents either literally or under the doctrine of equivalents. I therefore recommend that Daubert's motion for summary judgment be granted.[12]

---

[12]It should also be noted that any coating alleged to contain chlorinated rubber or aluminum cannot infringe the '530 patent either literally or under the doctrine of equivalents. Kaliardos stated in his application for the '036 patent that chlorinated rubber performs the important function of making the coating more resistant to detergents. I find that this additional ingredient in the

[footnote continued]

FULLER

Fuller manufactures two formulas that are named in this suit. The formula for WC-2291 lists:

Microcrystalline wax—15-30%
VM&P Naphtha (an aliphatic solvent containing small amounts of aromatics)—20-40%
Aliphatic oil (Hydro treated)—1-5%
Calcium sulfonate—5-10%
Paraffinic wax—5-10%
Aliphatic hydrocarbon resin—15-30%

A second product, WC-2291-P, is similar to WC-2291, but also contains mineral spirits.

Kaliardos claims that Fuller coatings WP-2291 and WP-2291-P infringe claims 1 and 2 of his '530 patent under the doctrine of equivalents. In support of this claim, David Byrd submitted an affidavit on October 19, 1992 stating that he detected the chlorinated solvent 1,1, dichloroethene and the aromatic solvents benzene, toluene, ethylbenzene and xylene in both the WC-2291 and WC-2291-P coating samples submitted by Fuller. Byrd also stated that he examined wax coatings taken from the doors of a 1987 Chevrolet Celebrity, a 1988 Oldsmobile Delta 88, and a 1991 Pontiac Grand Prix.[13] He stated that he found microcrystalline wax and perchloroethylene in the Celebrity and the Delta 88 and

---

'036 patent materially affects the basic ingredient composition of the '530 patent. *Dow Chemical v. American Cyanamid Co.*, 615 F.Supp. 471 (E.D. La. 1985), *aff'd* 816 F.2d 617 (Fed. Cir. 1987). Similarly, the addition of aluminum in the '036 patent materially affects the composition of the '530 patent in that it is said to provide a hard shell as well as pigment.

[13] Plaintiff initially identified the Pontiac Grand Prix as a 1989 Cadillac Eldorado. After a great deal of discovery and expense, it has been properly identified.

found zinc and surfactants in the Grand Prix.[14] In his affidavit, Byrd also compares the ingredients of the '530 patent with the recipe for the Fuller WC-2291-P and concludes that the Fuller coating "has the ingredients or their equivalents of claim 1 of U.S. Patent No. 3,959,530."

In response, Fuller has submitted the affidavit of Michael Pellney, a chemist and the Technical Director for Fuller and before that, for Widger Chemical. Pellney states in his affidavit that there is neither perchloroethylene nor aromatic hydrocarbon solvents in the Fuller formulas, both of which are necessary to find infringement of the '530 patent under the doctrine of equivalents, pursuant to the law of the case. He further states that Fuller never manufactured or sold coatings containing the ingredients in Kaliardos' patents.

In addition, Fuller contends that the tests conducted on the doors of the 1987 Celebrity and the 1988 Olds Delta cannot be considered in opposition to its motion for summary judgment. This contention is correct. It should be remembered that Fuller did not begin manufacturing these coatings until 1989 and therefore, no coating by Fuller could possibly be on these vehicles.

---

[14]The deposition testimony and affidavits regarding the 1991 Pontiac Grand Prix has been stricken by me in an order dated October 1, 1992. There was meager evidence in the record that this vehicle even contained a wax coating similar to those in issue here. Indeed the evidence seemed to indicate that Mr. Byrd tested an adhesive rather than a coating. Regardless, Byrd filed two affidavits, one stating that the Pontiac contained a Daubert coating, the other stating that it contained a Fuller coating. Plaintiff's inability to identify the source of the alleged sealant on the 1991 Pontiac door compelled the conclusion that it not be considered against any of the defendants.

Finally, as with the BASF motion, there is no showing, with the requisite specificity, that the accused product performs substantially the same function, in substantially the same way with substantially the same results as the patented substance. Indeed, Byrd's testimony at his deposition is to the contrary. He specifically stated that there is no evidence to meet and he has conducted no tests to estalbish the *Graver Tank* requirements. Therefore, I find that there is no genuine issue of fact for trial on the issue of infringement under the doctrine of equivalents and recommend that summary judgment be granted in favor of Fuller.

GENERAL MOTORS

General Motors was initially alleged to have infringed plaintiff's patents under 35 U.S.C. §271(a) as an unauthorized user or seller of the patented inventions. Because I have concluded that plaintiff has failed to meet his burden of creating a genuine issue of fact on the issue of infringement with respect to the three suppliers, summary judgment should also be granted in GM's favor. Plaintiff's secondary contention that GM *may* have modified the materials supplied by the other defendants so as to infringe on the patent is the exact type of speculative and conclusory argument which may not be deemed to create a genuine issue of fact for trial. *See Matsushita Elec. Indus. Co.*, 475 U.S. at 86; *Boddy*, 821 F.2d at 349. Accordingly, for the reasons stated with respect to the other defendants, summary judgment should be granted to General Motors.

CONCLUSION

My review of this record establishes that the formulas used by the defendants in manufacturing their coatings have repeatedly been shown not to contain the essential elements of the Kaliardos patents, through both the disclosure of the formulas and scientific testing of those formulas. There is simply no evidence in this record which would create a genuine issue of material fact as to whether any of the accused products infringe upon Kaliardos' patents either literally or under the doctrine of equivalence. Simply put, plaintiff's case is one that began with, and continues to rest upon, pure speculation and conclusion. This is insufficient to withstand summary judgment. Accordingly, for the reasons stated, I respectfully recommend that the defendants' motion for summary judgment be granted and that this matter be dismissed.

Pursuant to Rule 72(b) of the Federal Rules of Civil Procedure and 28 U.S.C. §636(b)(1), the parties are hereby notified that within ten days after being served with a copy of this recommendation, they may serve and file specific written objections to the proposed findings and recommendations. Further, either party may respond to another party's objections within ten days after being served with a copy thereof. The parties are further informed that failure to timely file objections may constitute a waiver of any further right of appeal to the United States Court of Appeals. *United States v. Walters*, 638 F.2d 947 (6th Cir. 1981).

/s/ Marc L. Goldman
MARC L. GOLDMAN
UNITED STATES MAGISTRATE JUDGE

Date: OCTOBER 7, 1993

APPENDIX B

District Court's Opinion Granting Summary Judgment Non-Infringement to Co-Defendants National Starch and Beazer East

[Kaliardos v. General Motors et al, 777 F.Supp. 543 (E.D. Mich. 1991)]

UNITED STATES DISTRICT COURT,
E.D. MICHIGAN, S.D.

No. 88-73729

NICOLAS KALIARDOS,

Plaintiff,

v.

GENERAL MOTORS CORPORATION, BASF CORPORATION, DAUBERT INDUSTRIES, INC., H.B. FULLER COMPANY, NATIONAL STARCH & CHEMICAL CORPORATION, and BEAZER EAST, INC., JOINTLY AND SEVERALLY,

Defendants.

Nov. 12, 1991

Alex Rhodes, Richard Knoll, Birmingham, Mich., for Nicolas Kaliardos.

Herbert Furman, General Motors Corp., Detroit, Mich., Bernard J. Cantor, Harness Dickey, Troy, Mich., for General Motors Corp., BASF Corp. and H.B. Fuller Co.

Ira S. Auslander, Auslander & Churilla, John A. A
William J. Schramm, Brooks & Kushman, Southfield, Mich., for Daubert Industries, Inc.

William G. Abbatt, Ernie L. Brooks, Brooks & Kushman, Bob Randenburg, Southfield, Mich., for Nat. Starch & Chemical Corp. and Beazer East, Inc.

MEMORANDUM OPINION AND ORDER GRANTING DEFENDANTS' NATIONAL STARCH & CHEMICAL CORPORATION AND BEAZER EAST, INC. MOTION FOR SUMMARY JUDGMENT ON COUNT 1, PATENT INFRINGEMENT

GADOLA, District Judge.

Plaintiff Nicholas Kaliardos filed this complaint on September 14, 1988, charging General Motors Corporation and BASF Corporation with infringing U.S. Patent Nos. 3,959,530 and 4,356,036. In February 1990 plaintiff added claims of infringement against National Starch & Chemical Corporation. In September 1990 plaintiff added claims of infringement against Beazer East, Inc.

The patents each relate to specific mixtures of chemical ingredients for wax-type, solvent-based, anti-rust coatings. Plaintiff accuses National Starch and Beazer of infringement by manufacturing and selling wax-type, solvent-basee coatings to General Motors. Defendants National Starch and Beazer now bring the instant motion for summary judgment on the patent infringement claims against them. For the reasons set forth below, the defendants' motion is granted.

FACTS

During the 1970's vehicle corrosion was a serious problem for automobile manufacturers. The plaintiff, a self-taught chemist, experimented with, tested and invented two wax-type, anti-corrosion coatings. Plaintiff submitted his inventions to the Patent and Trademark Office (PTO). After some language difficulties expressed by the Patent Office Examiner, plaintiff was granted U.S. Patent No. 3,959,530 and No. 4,356,036. Claim 1 to U.S. Patent No. 3,959,530 reads as follows:

> A cleaning and protective coating composition consisting essentially of a mixture of
>
> wax residue such as paraffin and microcrystalline wax,
>
> *perchlogoethylene*,
>
> petroleum distillate *having a boiling point ranging between 350 degrees and 380 degrees F.*, and
>
> a nonionic surfactant such as nonylphenoxypoly (ethyleneoxy) and
>
> a small amount of [N.N.N', N'-tetrakis (2-hydroxypropyl) ethylenediamine].

The italicized terms were changes made by the plaintiff in response to references cited by the PTO. These changes were necessary to secure the patent. Claim 1 to U.S. Patent No. 4,356,036 reads as follows:

> An anti-corrosion coating composition comprising
>
> a mixture of aluminum paste or zinc paste containing aluminum or zinc flakes and a solvent,
>
> microcrystalline wax,
>
> aromatic hydrocarbon resin *having a softening point, R and B, of 70 C.-140 C.*,

cholrinated rubber *having a combined chlorine content of at least 66%*,

neutral barium sulfonate,
chlorinated solvent,
aromatic hydrocarbon solvent and
mineral spirits.

Again, the italicized terms were changes made by the plaintiff in response to references cited by the PTO. These changes were necessary to secure the patent. Plaintiff asserts he invented the two wax-type, anti-corrosion coatings to specifically meet the requirements of General Motors Material Specifications 998-1128 and 998-2150. General Motors never accepted any of plaintiff's coatings for use.

From 1980 to the present, General Motors has used wax-type coatings on the inside surfaces of its automobiles. From the mid-1970s, Koppers, Inc. and Parr, Inc., predecessor companies to National Starch and Beazer, supplied General Motors with a wax-type coating, defendants' product No. 820-1913, that General Motors sprayed into the interior of car doors and other body parts. Two prototype batches of a dripless coating, defendants' product No. 820-1914, were made in 1987-88. Both of these products correspond to General Motors Material Specification 998-2150. According to defendants and their affiant Mr. Habjanic, no coating was supplied by National Starch, Beazer or any predecessor company that met General Motors Material Specification 998-1128. National Starch is the successor to a part of Beazer's business that used to supply coating No. 820-1913.

Plaintiff claims that General Motors received proprietary information from plaintiff during the testing process on his patented coating. Plaintiff further claims that

General Motors gave this information to National Starch and Beazer, among others, in order to duplicate and utilize the coatings without compensating the plaintiff. National Starch, Beazer and General Motors deny these allegations. Further, defendants' affiants Mr. Habjanic and Mr. Meilus state that the defendants' products No. 820-1913 and No. 820-1914 do not contain the identical nor the essential ingredients contained in the plaintiff's patented coatings. The plaintiff, in a sworn affidavit, disputes this last contention, further adding that "the ingredients or their equivalents which Mr. Habjanic represents are not present in Koppers 820-1913 and 820-1914 coatings are necessary for meeting the General Motors 998-1128 and 998-2150 Material Specifications."[1]

STANDARD OF REVIEW

Under Rule 56(c) of the Federal Rules of Civil Procedure, summary judgment may be granted "if the pleadings, depositions, answers to interrogatories, and admissions on file, together with the affidavits, if any, show that there is no genuine issue as to any material fact and that the moving party is entitled to judgment as a matter of law." "A fact is 'material' and precludes grant of summary judgment if proof of that fact would have [the] effect of establishing or refuting one of the essential elements of the cause of action or defense asserted by the parties, and would necessarily affect [the] application of appropriate principle[s] of law to the rights and obligations of the parties." (Citation omitted.) *Kendall v. Hoover Co.*, 751 F.2d 171, 174 (6th Cir. 1984) (quoting Black's Law Dictionary 881 (6th ed. 1979)). The Court must view the evidence in a light most favorable to the

---

[1] Kaliardos Affidavit at para. 13.

nonmovant as well as draw all reasonable inferences in the nonmovant's favor. *See United States v. Diebold, Inc.*, 369 U.S. 654, 655, 82 S.Ct. 993, 994, 8 L.Ed.2d 176 (1962); *Bender v. Southland Corp.*, 749 F.2d 1205, 1210-11 (6th Cir. 1984).

The movant bears the burden of demonstrating the absence of all genuine issues of material fact. *See Gregg v. Allen-Bradley Co.*, 801 F.2d 859, 861 (6th Cir. 1986). The initial burden on the movant is not as formidable as some decisions have indicated. The moving party need not produce evidence showing the absence of a genuine issue of material fact; rather, "the burden on the moving party may be discharged by 'showing'—that is, pointing out to the district court—that there is an absence of evidence to support the nonmoving party's case." *Celotex Corp. v. Catrett*, 477 U.S. 317, 325, 106 S.Ct. 2548, 2554, 91 L.Ed.2d 265 (1986). Once the moving party discharges that burden, the burden shifts to the nonmoving party to set forth specific facts showing a genuine triable issue. Fed.R.Civ.P. 56(e); *Gregg*, 801 F.2d at 861.

To create a genuine issue of material fact, however, the nonmovant must do more than present some evidence on a disputed issue. As the United States Supreme Court stated in *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 249-50, 106 S.Ct. 2505, 2511, 91 L.Ed.2d 202 (1986).

> There is no issue for trial unless there is sufficient evidence favoring the nonmoving party for a jury to return a verdict for that party. If the [nonmovant's] evidence is merely colorable, or is not significantly probative, summary judgment may be granted.

(Citations omitted); *See Catrett*, 477 U.S. at 322-23, 106 S.Ct. at 2552-53; *Matsushita Elec. Indus. Co. v. Zenith Radio Corp.*, 475 U.S. 574, 586-87, 106 S.Ct. 1348,

1355-56, 89 L.Ed.2d 538 (1986). The standard for summary judgment mirrors the standard for a directed verdict under Fed.R.Civ.P. 50(a). *Anderson*, 477 U.S. at 250, 106 S.Ct. at 2511. Consequently, a nonmovant must do more than raise some doubt as to the existence of a fact; the nomovant must produce evidence that would be sufficient to require submission to the jury of the dispute over the fact.

Further, summary judgment is as applicable in patent cases as any other. As the Federal Circuit stated in *Johnston v. IVAC Corp.*, 885 F.2d 1574, 1576 (Fed.Cir. 1989):

> As in other cases, the grant of summary judgment under Fed.R.Civ.P. 56 is appropriate in a patent case where no genuine issue of material fact exists and the movant is entitled to judgment as a matter of law.
>
> * * *
>
> [T]he motion of an accused infringer for judgment on the ground of non-infringement of a patent may be granted where the patentee's proof is deficient in meeting an essential part of the legal standard for infringement.

APPLICABLE LAW

A patent is a federal statutory grant under 35 U.S.C. §101. The patent, to be protected, must comport with certain statutory requirements. Section 112 of Title 35 states in relevant part that:

> [A patent] specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

35 U.S.C. §112. The Federal Circuit has stated that "[t]he claims alone delimit the right to exclude; only they may be infringed." *Environmental Instruments Inc. v. Sutron Corp.*, 877 F.2d 1561, 1564 (Fed.Cir. 1989).

In patent law, every element of the claim must be found in the accused product—either actually or by a substantially equivalent element—in order to find an infringement.

> [W]here the respondent in constructing his [product] omits one of the ingredients of the complainant's combination, he does not infringe the complainant's patent.

Pennwalt Corp. v. Durand-Wayland, Inc., 833 F.2d 931, 950 (Fed.Cir. 1987) (Nies, J., concurring), *cert. denied*, 485 U.S. 961, 1009, 108 S.Ct. 1226, 1474, 99 L.Ed.2d 426 (1988); *see also Lemelson v. United States*, 752 F.2d 1538, 1551 (Fed.Cir. 1985) ("the plaintiff must show the presence of every element or its substantial equivalent in the accused [product]").

> Thus, the accused infringer . . . is entitled to summary judgment, on the ground of non-infringement, by pointing out that the patentee failed to put forth evidence to support a finding that [an element] of the asserted claim was met by the . . . accused [product].

Johnston, 885 F.2d at 1578.

Infringement may be shown in only two ways. First, if every single element of limitation in the claim is found in the accused product, there is *literal infringement. See Builders Concrete, Inc. v. Bremerton Concrete Prods. Co.*, 757 F.2d 255, 257 (Fed.Cir. 1985). Second, infringement can occur where the accused product has corresponding elements which perform substantially the same function

in substantially the same way to obtain the same result. *See Graver Tank Co. v. Linde Air Prods. Co.*, 339 U.S. 605, 609-10, 70 S.Ct. 854, 856-57, 94 L.Ed. 1097 (1950); *Builders Concrete*, 757 F.2d at 258. This second path to infringement is called the doctrine of equivalents.

The doctrine of equivalents will not extend to allow the patentee to recapture through equivalence certain converage given up during prosecution of his patent application. *See Pennwalt*, 833 F.2d at 934 n.1. Therefore, the language changed by the plaintiff in securing his patents is critical if the doctrine of equivalents infringement is pursued. This limitation is called *prosecution history estoppel.*

> Prosection history estoppel, which precludes a patentee from obtaining a claim construction that would resurrect subject matter surrendered during prosecution of his patent application . . . limits a patentee's reliance on the doctrine of equivalents. . . .

Builders Concrete, 757 F.2d at 258; *see also Jonsson v. Stanley Works*, 711 F.Supp. 1395, 1403 (N.D.Ohio 1989) ("Arguments and remarks made by plaintiff's counsel during prosecution of the patent application can also be used to determine the scope of the claims"), *aff'd.*, 903 F.2d 812 (Fed.Cir. 1990). Finally, a claimant may not "broaden his claim by dropping [an] element which he was compelled to include in order to secure his patent." *I.T.S. Rubber Co. v. Essex Rubber Co.*, 272 U.S. 429, 443, 47 S.Ct. 136, 141, 71 L.Ed. 335 (1926).

ANALYSIS

Plaintiff Kaliardos claims that National Starch and Beazer have infringed Claim 1 of each of his patents. However, plaintiff has not produced sufficient initial or rebuttal evidence to meet his burden of production.

In response to interrogatories asking plaintiff which of the products manufactured or sold by National Starch and/or Beazer infringes plaintiff's patents, plaintiff identified the product sold under General Motors Specification 998-1128. However, no sales of this product by National Starch or Beazer have been identified by the plaintiff.[2] In fact, the defendants' affiant states that no product sold by National Starch, Beazer or their predecessors matched General Motors Material Specification 998-1128.[3] If the defendants did supply General Motors with the coating it used under 998-1128, then plaintiff should have come forth with some hard evidence. The plaintiff states that he needs more time to effect discovery to retrieve this evidence. However, National Starch has been a named defendant for 20 months. Beazer has been a named defendant for over 13 months. Thus, this court is lead to the conclusion that there is either no link between the movants and 998-1128, or plaintiff has been extremely dilatory in his discovery. Either conclusion is fatal to plaintiff's case.

Further, the affidavits of Habjanic and Meilus state that National Starch's and Beazer's wax-type coatings do not include (a) perchloroethylene,[4] (b) nonionic surfactants,[5] (c) [N.N.N', N'-tetrakis (2-hydroxypropyl)

---

[2]Plaintiff's Answer No. 17 to Defendant Beazer's First Set of Interrogatories; Plaintiff's Answer No. 7 to Defendant National Starch's First Set of Interrogatories.

[3]Habjanic Affidavit at para. 3.

[4]Habjanic Affidavit at para. 7 (referring to movants' product 820-1913); *id.* at para. 11 (referring to movants' product 820-1914); Meilus Affidavit at paras. 7 and 14 (referring to all movants' anti-corrosion coatings).

[5]Habjanic Affidavit at para. 9 (referring to movants' product 820-1913); Meilus Affidavit at para. 8 (referring to all movants' anti-corrosion coatings).

ethylenediamine],[6] (d) mixtures of aluminum paste or zinc paste or equivalent mixtures,[7] (e) aromatic hydrocarbon resins having softening points, R and B, of 70 degrees C.-140 degrees C.,[8] (f) chlorinated rubber having a combined chlorine content of at least 66%,[9] (g) aromatic hydrocarbon solvents,[10] or (h) chlorinated solvents.[11] Plaintiff has not put forth any proof that these affidavits are false or misleading. The only evidence plaintiff has offered is his own affidavit. The Plaintiff states that the ingredients of movants' products 820-1913 and 820-1914 listed in the attachments to the Habjanic Affidavit are accurate.[12] The plaintiff then points out that the ingredients in the movants' products are identified by their trademark names and not their chemical formulae.[13] The complainant continues:

> There are no disclosures in Attachments "A" and "B" of the ingredients in the trademarked products, their chemical formula [*sic*] or their percentages by weight.

---

[6]Meilus Affidavit at para. 9 (referring to all movants' anti-corrosion coatings).

[7]Habjanic Affidavit at para. 12 (referring to movants' products 820-1913 and 820-1914).

[8]Meilus Affidavit at para. 10 (referring to all movants' anti-corrosion coatings).

[9]Habjanic Affidavit at para. 13 (referring to movants' products 820-1913 and 820-1914); Meilus Affidavit at para. 11 (referring to all movants' anti-corrosion coatings).

[10]Meilus Affidavit at para. 13 (referring to all movants' anti-corrosion coatings).

[11]Meilus Affidavit at para. 12 (referring to all movants' anti-corrosion coatings).

[12]Kaliardos Affidavit at para. 8.

[13]*Ibid.* at para. 9.

Kaliardos Affidavit at para. 10. While this is true, this does not refute the very clear statements made by Mr. Habjanic and Mr. Meilus. All this does is tell the court that the plaintiff does not know these trademarked products' chemistry. This bare statement does not indicate that the trademarked products used as ingredients in the movants' products contain any one of the elements in the patentee's claims.

Elements (a) through (c) are essential for literal infringement of Claim 1 to U.S. Patent 3,959,530. Element (a) is essential for equivalent infringement of Claim 1 to U.S. Patent 3,959,530. Elements (d) through (h) are essential for literal infringement of Claim 1 to U.S. Patent 4,356,036. Elements (e) and (f) are essential for equivalent infringement of Claim 1 to U.S. Patent 4,356,036. As not all elements are present in the movants products, patent infringement is not possible. Therefore, summary judgment in favor of the movants is proper. *Johnston*, 885 F.2d at 1578.

APPENDIX C

Order Granting Partial Summary Judgment of Non-Infringement

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF MICHIGAN
SOUTHERN DIVISION

Civil Action
Case No. 88-CV-73729-DT
HON. Paul V. Gadola

NICOLAS KALIARDOS,

Plaintiff,

vs.

GENERAL MOTORS CORPORATION, BASF CORPORATION, DAUBERT INDUSTRIES, INC., H.B. FULLER COMPANY, and H.B. FULLER AUTOMOTIVE INDUSTRIES, INC., jointly and severally,

Defendants.

ORDER GRANTING PARTIAL SUMMARY JUDGMENT OF NON-INFRINGEMENT

Upon stipulation of the Plaintiff Nicolas Kaliardos (Kaliardos) and the Defendants General Motors Corporation (General Motors); BASF Corporation (BASF); Daubert Industries, Inc. (Daubert); H.B. Fuller Company (Fuller Company); and H.B. Fuller Automotive Products (Fuller Automotive), by and between their respective counsel, IT IS HEREBY ORDERED:

1. The BASF, Fuller Automotive, and Daubert coatings do not literally infringe claims 1, 2, 3, 4, 5 and 6 of U.S. Patent No. 3,959,530.

2. The BASF, Fuller Automotive; and Daubert coatings do not infringe claims 3, 4, 5 and 6 of U.S. Patent No. 3,959,350 under the Doctrine of Equivalents.

3. Plaintiff's complaint with respect to infringement of claims 3, 4, 5 and 6 of U.S. Patent No. 3,959,530 is dismissed with prejudice.

4. The Fuller Automotive coatings do not infringe any of the claims of U.S. Patent No. 4,356,036 by literal infringement or under the Doctrine of Equivalents.

5. The BASF and Daubert coatings do not literally infringe claims 2, 3, 4 and 7 of U.S. Patent No. 4,356,-036.

6. The BASF and Daubert coatings do not infringe claim 7 of U.S. Patent No. 4,356,036 under the Doctrine of Equivalents.

7. Plaintiff's complaint of infringement of claim 7 of U.S. Patent No. 3,356,036 is dismissed with prejudice with respect to BASF and Daubert.

8. Plaintiff's complaint of infringement of U.S. Patent No.4,356,036 by Fuller Company and Fuller Automotive is dismissed with prejudice.

9. Daubert's coating Nox-Rust X-170 does not infringe U.S. Patent No. 4,356,036.

Dated:10/16/92 /s/ [Illegible]
UNITED STATES DISTRICT JUDGE

SO STIPULATED:

/s/ Alex Rhodes
Attorney for Plaintiff

/s/ Bernard J. Cantor
Attorney for Defendants
General Motors, BASF, H.B.
Fuller Company and H.B.
Fuller Automotive Products, Inc.

/s/ John A. Artz (10/14/92)
Attorney for Defendant
Daubert Industries, Inc.

APPENDIX D

General Motors Corporation Rule 29.2 Statement

STATEMENT PURSUANT TO
SUPREME COURT RULE 29.1

General Motors Corporation does not have a parent company. Its non-wholly owned subsidiaries that have issued shares to the public are identified below.

Publicly Traded Subsidiaries and Affiliates:

Isuzu Motors Ltd.
Suzuki Motor Corp.

Other Subsidiaries:

AC Bakony Kft.
Adela Investment Co. S.A.
AeroVironment, Inc.
AMBRAKE Corporation
Anadolu Otomotiv Sanayi VE Ticaret A.S.
Applied Intelligent Systems, Inc.
Aralmex, S.A. de C.V.
ARINC Incorporated
Asset Leasing GmbH
Aura S.r.l.
Autos y Maquinas del Ecuador S.A. (AYMESA)
Banque de Credit General Motors
Bujias Mexicanas, S.A. de C.V.
CAMI Automotive, Inc.
CEI Co., Ltd.
Calsonic Harrison Co., Ltd.
Carus Grundstucks-Vermietungsgesellschaft mbH & Co.
Object Kuno 65 KG
Carus Grnndstucks-Vermietungsgesellschaft mbH & Co.
Object Leo 40 KG

Other Subsidiaries, continued:

Centro Tecnico Herramental, S.A. de C.V.
Cilva Holdings Plc
Cimflex Teknowledge
Coalition Undertaking Remedial Efforts, Inc.
Colonial Mortgage Service Company of California
Comau Productivity Systems, Inc.
Compagnie des Faisceaux Tunisiens International S.A.
Compania Nacional de Direcciones Automotrices, S.A. de C.V.
Componentes Delfa, C.A.
Constructora Venezolana de Vehiculos, C.A.
Controladora General Motors, S.A. de C.V.
Convesco Vehicle Sales GmbH
DHB America Inc.
DHB-Componentes Automotivos S.A.
DRB s.a./n.v.
Daewoo Automotive Components, Ltd.
Delkor Battery Company, Ltd.
Detroit Diesel Corporation
Diavia S.r.I.
EDESA Societe Anonyme Holding
EPEC S.A.
Empresa Mixta GEMACVEN, S.A.
Freevale Limited
G. & F. Company
GM Nigeria Limited
G.M.A.C. Financiera de Columbia S.A. Compania de Financiamiento Comercial
General Motors Bankgesellschaft m.b.H.
General Motors Egypt, S.A.E.
General Motors France Automobiles S.A.
General Motors Hungary Automotive Distribution Limited Liability Company (aka General Motors Hungary (Distribution) Ltd.)

Other Subsidiaries, continued:

General Motors Hungary Automotive Manufacturing Limited Liability Company (aka General Motors Hungary (Manufacturing) Ltd.)
General Motors Kenya Limited
Genie Mecanique Zairois, S.A.R.L.
I.K. Coach Co., Ltd.
IBC Vehicles (Distribution) Limited
IBC Vehicles Limited
ITC Inland Teknik Oto Yan Sanayi Limited Sirketi
Ilmor Engineering, Inc.
Ilmor Engineering, Ltd.
Industries Mecaniques Maghrebines, S.A.
Industrija Delova Automobila, Kikinda
Isuzu-General Motors Australia Limited
Isuzu Motors Limited
Jinbei GM Automotive Co. Ltd.
Kabeltrommel GmbH & Co. KG
Kabelwerke Reinshagen GmbH
Kabelwerke Reinshagen Werk Berlin GmbH (aka Kabelwerke Reinshagen Berlin Plant GmbH)
Kabelwerke Reinshagen Werk Neumarkt GmbH (aka Kabelwerke Reinshagen Neumarkt Plant GmbH)
Macopel, S.A. de C.V.
Mecel AB
Metal Casting Technology, Inc.
Millbrook Pension Management Ltd.
National Car Rental System Inc.
New Cure, Inc.
New United Motor Manufacturing, Inc.
New Venture Gear, Inc.
Omnibus BB Transportes, S.A.
Opel-Automobilwerk Eisenach-PKW GmbH (a/k/a Opel-AWE GmbH)

Other Subsidiaries, continued:

Opel-Handler Versicherungsdienst GmbH
Opel-Wohnbau GmbH
P.T. Mesin Isuzu Indonesia
PDES, Inc.
PW-Allison Engines
Packard CTA Pty. Ltd.
Packard Electric Vas kft
Penske Transportation, Inc.
Perceptron, Inc.
Promotora de Partes Electricos Automotrices
Qual-Effic Services, Inc.
Robotic Vision Systems, Inc.
Ruedas de Aluminio, C.A.
Saab Automobile AB
Senalizacion y Accesorios del Automovil Yorka, S.L.
Shinsung Packard Company, Ltd.
Sociedad de Comercializacion Internacional Colmotores S.A.
Societe Francaise des Amortisseurs de Carbon S.A.
Subaru-Isuzu Automotive, Inc.
Sung San Company, Ltd.
Suzuki Motor Corporation
Truck and Bus Engineering U.K., Limited
United Australian Automotive Industries Limited
Uveral S.A.
Vanguarda Componentes Automotivos, S.A.
Vauxhall Motors (Finance) Plc
View Engineering, Inc.
Volvo GM Canada Heavy Truck Corporation
Volvo GM Heavy Truck Corporation
Woodbridge Foam Deutschland, GMBH

Other Subsidiaries, and Affiliates of Electronic Data Systems Corporation:

Aristacom International, Inc.
BSS Belgique
BSS Greece
BehaviorTech, Inc.
Beijing International Information Processing Company Limited
CAPSCO Software Canada, Ltd.
CLIOR
CLS Corporation
COGSYS Limited
Centigram Communications Corporation
China Management Systems Corporation
Comtrac Corporation
EDS Hellas
EDS-Scicon Defence Limited
Emperion Corporation
Europe Assurance Informatique
F.I.J. (France Informatique Juridique)
Federal Integrated Systems Corporation
First City Bancorporation of Texas, Inc.
GEST'HELP Huissier
GMB Belgique
Healthco Holding Corporation
Hitachi Data Systems Holding Corporation
Hospitality Franchise Systems, Inc.
Infosys
Institut des Techniques Avancees
Interpractice Systems, Inc.
Japan Systems Kabushiki Kaisha (aka Japan Systems K.K.)
LEA GP Incorporated
MCE

Other Subsidiaries, and Affiliates of Electronic Data Systems Corporation, continued:

Neodata Holdings, Inc.
Nippon EDS Co., Ltd. (aka Nippon EDS Kabushiki Kaisha)
Postal Buddy Corporation
PROGICAL
Riser Foods, Inc.
Simpad, Sociedad Anonima de Capital Variable (aka Simpad, S.A. de C.V.)
Soft-Switch, Inc.
Systems Control Technology, Inc.
Systems Technology Management Corporation
Telecommunications Data Services, Incorporated
The ASK Group, Inc.
Thomas Group, Inc.
Westcott Communications, Inc.
YLYS Informatique

Other Subsidiaries, and Affiliates of Hughes Aircraft Company:

ACCSCO S.A.
AMRAAM International Licensing Company
American Mobile Satellite Corporation
Comlinear Corporation
ELTRO GmbH
ELEKLUFT Elecktronic-und Luftfahrtgerate GmbH
Empresa Nacional de Optica S.A.
FLIR Systems, Inc.
First Portland Technology Corp.
Guiado y Control SA
HBH Company
HESI-FTIC Environmental Sciences, Inc.
Hughes Escorts Communications Limited

Other Subsidiaries, and Affiliates of Hughes Aircraft Company, continued:

Hughes-JVC Technology Corporation
Hughes-Kenwood RDSS, Inc.
Hughes-Pareto Research Partnership
Hughes Software Systems Private Limited
i-Logix Inc.
Interactive Entertainment, Inc.
International Electro-Optical Industry Anonim Sirketi
International Mobile Machines Corporation
Japan Communications Satellite Company, Inc.
Japan Satellite Communications Network Corporation
Microelectronics and Computer Technology Corporation
Nippon Avionics Co., Ltd.
Pacific Monolithics, Inc.
RALS (RAM Alternate Launcher System)
Satelitron S.A. de C.V.
Societe Lyonnaise d'Informatique Boursiers
Software Productivity Consortium, Inc.
Translant, Inc.
UKADGE Systems Limited

APPENDIX E

BASF Corporation Rule 29.1 Statement

BASF Corporation is a subsidiary of BASF Aktiengesellschaft of Ludwigshafen, Germany.

APPENDIX F

H.B. Fuller Rule 29.1 Statement

H.B. FULLER AND CONSOLIDATED SUBSIDIARIES
AS OF NOVEMBER 30, 1994

H.B. Fuller Company
Branches: Indonesia, Korea, Netherlands (LPD)
H.B. Fuller Company Puerto Rico, Inc.
H.B. Fullor International Inc.
Branches: Australia, Hong Kong, Singapore
ChemEquity, Inc.
ChemEquity Communications, Inc.
F.A.I. Trading Company
Fiber-Resin Corporation
H.B. Fuller Automotive Products, Inc.
Lombard Acquisition Corporation
H.B. Fuller Automotive Technology Systems, Inc.
Foster Products Corporation
TEC Incorporated
H.B. Fuller Licensing & Financing Inc.
Alreline, Inc.
Kativo Chemical Industries, S.A.
(See listing of subsidiaries on the following pages.)
Pinturas Centroamericanas Costa Rica S.A.
Mundo de Colores Pintica, S.A.
Pinturas Ecuatorianas, S.A.
Distribuidora Americana, S.A.
Glidden Panama S.A.
Glidden Avenida Nacional, S.A.
Glidden Colon, S.A.
Glidden Chitre, S.A.
Glidden David, S.A.
Glidden Bethania, S.A.

Glidden El Dorado, S.A.
Glidden Via Espana, S.A.
Glidden Chorrera, S.A.
Fabrica Pinturas Glidden, S.A.
H.B. Fuller Austria GesmbH
H.B. Fuller Belgium N.V./S.A.
Harved Oy
H.B. Fuller GmbH, Luneburg
Karl Sager, GmbH
H.B. Fuller GmbH, Munich
Isar-Rakoll Chemie, GmbH
H.B. Fuller France S.A.
H.B. Fuller Blattmann AG
H.B. Fuller Italia s.r.l.
H.B. Fuller SICAM S.p.A.
H.B. Fuller (Jersey) Limited
H.B. Fuller Nederland B.V.
Prakoll, S.A.
H.B. Fuller Sverigo AB
H.B. Fuller Holdings Limited
H.B. Fuller U.K. Limited
H.B. Fuller Coatings Limited
H.B. Fuller Canada, Inc.
H.B. Fuller Company Australia Pty. Ltd.
H.B. Fuller (China) Adhesives Ltd.
H.B. Fuller India Private Limited
H.B. Fuller Japan Company, Ltd.
H.B. Fuller Korea Co., Ltd.
H.B.F. Adhesives (Malaysia) Sdn. Bhd.
H.B. Fuller Company (N.Z.) Ltd.
H.B. Fuller Holdings (NZ) Ltd.
H.B. Fuller Powder Coatings (NZ) Ltd.
H.B.Fuller Powder Coatings Pty. Ltd.
H.B. Fuller (Philippines), Inc.
H.B. Fuller-Realty (Philippines) Company

H.B. Fuller Taiwan Company Ltd.
H.B. Fuller (Thailand) Co., Ltd.
Multi-Clean Products Pty. Ltd.
Multi-Clean (Lebanon) S.A.R.I.
H.B. Fuller Lebanon S.A.R.L.
Nippon Tilement Company, Ltd.

KATIVO CHEMICAL INDUSTRIES,
S.A. AND CONSOLIDATED SUBSIDIARIES
AS OF SEPTEMBER 30, 1994

Chemical Supply, S.A.
H.A. Fuller Argentina, S.A.
H.B. Fuller Latin America
H.B. Fuller Bolivia, Ltda.
H.B. Fuller Brasil, Ltda.
H.B. Fuller Brasil – Sul, I tda.
H.B. Fuller Chile, S.A.
H.B. Fuller Colombia, Ltda.
Kativo Costa Rica, S.A.
Kativo Comercial, S.A.
Reca Quimica, S.A.
H.B. Fuller Costa Rica, S.A.
Acrilicos de Centroamerica, S.A.
Alfombras Canon, S.A.
Analko, S.A.
Sinteticos, S.A.
Deco Tintas, S.A.
H.B. Fuller Dominicana, S.A.
H.B. Fuller Ecuador, S.A.
Inversiones Kem Supply, S.A.
Kativo de El Salvador, S.A.
Kativo Industrial de El Salvador, S.A.
H.B. Fuller El Salvador, S.A.

Deco Tintas de El Salvador, S.A.
Norchem, Ltda.
Kativo Comercial de Guatemala, S.A.
Compania Mercantil de Pinturas
Kativo de Guatemala, S.A.
Kiosko de Pinturas, S.A.
H.B. Fuller Guatemala, S.A.
Sinteticos de Guatemala, S.A.
Punlo de Viniles, S.A.
Alfombras Canon de Guatemala, S.A.
Kativo de Honduras, S.A.
Aerosoles de Centroamerica, S.A.
Alfombras Canon, S.A.
Comercial Punto de Viniles, S.A.
Kiosko Comercial, S.A.
Kativo Comercial, S.A.
Punto de Viniles, S.A.
Kiosko de Pinturas, S.A.
Fabrica de Pinturas Surekoto de Honduras, S.A.
Servicios e Inversiones de Honduras, S.A.
Deco Tintas De Honduras, S.A.
H.B. Fuller Honduras, S.A.
Comercial Fuller, S.A.
H.B. Fuller Mexico, S.A.
Industrias Kativo de Nicaragua, S.A.
Ditribuidora Industrial y Comercial, S.A.
H.B. Fuller Nicaragua, S.A.
Chemical Supply Corporation
Kativo de Panama, S.A.
Kativo Comercial, S.A.
Colorcentro, S.A.
Fuller Istmena, S.A.
Procesamientos Contables, S.A.
Alquileres Industriales, S.A.
Alfombras Canon, S.A.

Deco Tintas Comerciales, S.A.
H.B. Fuller Panama, S.A.
H.B. Fuller Comercial, S.A.
Deco Tintas de Panama, S.A.
Vigilia, S.A.
Sistema Integrados, S.A.
Chemical Supply Peruana, S.A.
H.B. Fuller Peru, S.A.
H.B. Fuller Uruguay, S.A.
H.B. Fuller Venezuela, S.A.

Supreme Court, U.S.
FILED
APR 21 1995
OFFICE OF THE CLERK

(3)

No. 94-1574

In The
Supreme Court of the United States
October Term, 1994

NICOLAS KALIARDOS,
Petitioner,

v.

GENERAL MOTORS CORPORATION, BASF CORPORATION, H.B. FULLER COMPANY, H.B. FULLER AUTOMOTIVE PRODUCTS, INC., and DAUBERT INDUSTRIES, INC.,
Respondents.

ON PETITION FOR WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

BRIEF OF RESPONDENT DAUBERT INDUSTRIES, INC. IN OPPOSITION TO PETITION FOR WRIT OF CERTIORARI

JOHN A. ARTZ
Counsel of Record
BROOKS & KUSHMAN, P.C.
1000 Town Center
Twenty-Second Floor
Southfield, Michigan 48075
(810) 358-4400

Attorneys for Respondent Daubert Industries, Inc.

April 20, 1995

Interstate Brief & Record Company, *a division of* North American Graphics, Inc.
1629 West Lafayette Boulevard, Detroit, MI 48216 (313) 962-6230

BEST AVAILABLE COPY

23 pp

TABLE OF CONTENTS

PAGE

TABLE OF AUTHORITIES iii

I. COUNTERSTATEMENT OF THE CASE 1

A. NATURE OF THE CASE AND PROCEEDINGS BELOW 1

B. RELEVANT FACTS 4

1. The GM Specifications 4

2. Daubert's Coatings 5

3. The Patent Claims At Issue 6

II. THE PETITION FOR WRIT OF CERTIORARI SHOULD BE DENIED 7

III. SUMMARY OF ARGUMENT 7

IV. ARGUMENT:

A. APPLICABLE LAW AND STANDARDS 9

1. Summary Judgment 9

2. Patent Infringement 10

B. THERE WAS NO EVIDENCE SUFFICIENT TO CREATE A TRIABLE ISSUE OF FACT REGARDING DAUBERT'S ALLEGED INFRINGEMENT 10

1. Nox-Rust X-170 10

2. Nox-Rust X-151 11

3. The '530 And '036 Patents Have A Narrow Scope 11

4. Kaliardos' "Evidence" 12

5. Kaliardos Could Not Show Infringement 13

6. Kaliardos' Own Expert Witnesses Testified As To The Lack Of Key Ingredients 14

7. No Evidence Of Equivalents 16

PAGE

C. KALIARDOS' BELATED ATTEMPT TO FILE ANOTHER TEST REPORT IN OPPOSITION TO DAUBERT'S MOTION WAS PROPERLY DENIED 16

D. THE DISTRICT COURT PROPERLY DENIED KALIARDOS' REQUEST FOR ANOTHER ORAL HEARING 18

V. CONCLUSION 19

TABLE OF AUTHORITIES

PAGE

CASES:

Anderson v. *Liberty Lobby, Inc.*, 477 U.S. 242 (1986) 9

Avia Group Int'l Inc. v. *L.A. Gear California, Inc.*, 853 F.2d 1557 (Fed. Cir. 1988) 10

Celotex Corp. v. *Catrett*, 477 U.S. 317 (1986) 9

Environmental Instruments Inc. v. *Sutron Corp.*, 877 F.2d 1561 (Fed. Cir. 1989) 10

Graver Tank & Mfg. Co. v. *Linde Air Products Co.*, 339 U.S. 605 (1950) 10

Johnston v. *IVAC Corp.*, 885 F.2d 1574 (Fed. Cir. 1989) 9, 10

Kaliardos v. *General Motors Corp.*, 777 F. Supp. 543 (E.D. Mich. 1991) 2, 9, 10, 12

Lemelson v. *United States*, 752 F.2d 1538 (Fed. Cir. 1985) 10

Pennwalt Corp. v. *Durand-Wayland, Inc.*, 833 F.2d 931 (Fed. Cir. 1987) 10

United States v. *Raddatz*, 447 U.S. 666, 65 L.Ed.2d 424, 100 S.Ct. 2406 (1980) 18

RULE:

Fed. R. Civ. P. 56(e) 9, 17

STATUTE:

35 U.S.C. § 102(b) 11

No. 94-1574

In The

Supreme Court of the United States

October Term, 1994

NICOLAS KALIARDOS,

Petitioner,

v.

GENERAL MOTORS CORPORATION, BASF CORPORATION, H.B. FULLER COMPANY, H.B. FULLER AUTOMOTIVE PRODUCTS, INC., and DAUBERT INDUSTRIES, INC.,

Respondents.

ON PETITION FOR WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

BRIEF OF RESPONDENT DAUBERT INDUSTRIES, INC. IN OPPOSITION TO PETITION FOR WRIT OF CERTIORARI

I. COUNTERSTATEMENT OF THE CASE

The Statement of the Case and Statement of Facts by Petitioner Nicolas Kaliardos ("Kaliardos") omit or misstate many of the relevant facts. Respondent Daubert Industries, Inc. ("Daubert") submits the following additional facts for the Court's consideration.

A.

NATURE OF THE CASE AND PROCEEDINGS BELOW

The present action was brought by Petitioner Kaliardos against a number of companies for patent infringement and conspiracy. The two patents-in-suit are U.S. No. 3,959,530 which issued on May 25, 1976 (A 41-45) and U.S. No. 4,356,036 which issued on October 26, 1982

(A 46-51).[1] The patents relate to mixtures (a/k/a "recipes") of specific chemical ingredients for wax-type anti-corrosion coatings.

Respondent General Motors ("GM") uses anti-corrosion coatings in the door panels of some of its vehicles to prevent rust. The remaining Respondents all supply coatings to GM which Kaliardos contends infringe the two patents-in-suit. Kaliardos also alleged that the Respondents conspired together to misappropriate and infringe his patent rights, but all of the conspiracy allegations in the lawsuit were dismissed due to the complete absence of factual support (A 2337-55, 2363-65). Only the patent infringement issues were involved in the decisions by the Magistrate, District Court and Court of Appeals which are the subject of this Petition.

In November, 1991, the District Court granted a motion for summary judgment by ex-defendants National Starch & Chemical Corp. ("National Starch") and Beazer East, Inc. ("Beazer"). See *Kaliardos* v. *General Motors Corp.*, 777 F. Supp. 543 (E.D. Mich. 1991).[2] That decision, which was not appealed, held that there was an absence of evidence to support Kaliardos' claims of infringement against those two parties and also set forth numerous conclusions relative to the scope and content of Kaliardos' patents and claims.

In December, 1991, after the close of discovery, Daubert and each of the other Respondents herein,

---

[1] Copies of the two patents-in-suit are contained in the Petitioner's Appendix at 62-95. The references "A___" refer to pages in the Joint Appendix which was before the Court of Appeals for the Federal Circuit.

[2] A copy of the published decision at 777 F. Supp. 543 is contained in the Appendix submitted with the Brief by Respondents GM, BASF and Fuller in opposition to Kaliardos' Petition.

made motions for summary judgment of non-infringement. Each of the Respondents contended that their anti-corrosion coatings did not infringe either of Kaliardos' patents and that Kaliardos did not have sufficient evidence to create genuine issues of material fact on the infringement issue. After the reopening of discovery to take additional depositions, the motions were presented to the Magistrate and orally argued in October, 1992 (A 2435-2613).

In October, 1993, the Magistrate issued his Report and Recommendation, which recommended that all of the Respondents' motions be granted and that the case be dismissed (A 61-87).[3] The Magistrate's conclusion is reproduced as follows:

> My review of this record establishes that the formulas used by the defendants in manufacturing their coatings have repeatedly been shown not to contain the essential elements of the Kaliardos patents, through both the disclosure of the formulas and scientific testing of those formulas. There is simply no evidence in this record which would create a genuine issue of material fact as to whether any of the accused products infringe upon Kaliardos' patents either literally or under the doctrine of equivalence. *Simply put, plaintiff's case is one that began with, and continues to rest upon, pure speculation and conclusion.* This is insufficient to withstand summary judgment. Accordingly, for the reasons stated, I respectfully recommend that the defendants' motion for summary judgment be granted and that this matter be dismissed.
>
> (Emphasis added.)

---

[3] **A copy of the Magistrate's "Report and Recommendation" is contained in the Appendix to the Brief by Respondents GM, BASF and Fuller.**

After reviewing Kaliardos' objections to the Magistrate's Report and Recommendation and the responses thereto, and after conducting a *de novo* review, the District Court accepted and adopted the Magistrate's findings and conclusions.[4] In this manner, Daubert's summary judgment motion, as well as the summary judgment motions of all of the other Respondents, were granted.

The Judgment of the District Court was entered on March 30, 1994 (A 3) and an appeal was taken to the United States Court of Appeals for the Federal Circuit. On November 22, 1994, the Court of Appeals rendered its decision which affirmed the decision of the District Court.[5] The present Petition for a Writ of Certiorari followed.

B.

RELEVANT FACTS

1. The GM Specifications

In order to aid in the prevention of corrosion on its automobiles, GM asked various chemical companies to supply it with anti-corrosion coatings which could be applied to various parts on its vehicles (particularly inside door panels). In this regard, GM issued Material Specifications 998-1128 and 998-2150 which set forth various standards and specifications that the materials should meet (A 1065-69, 1070-75). These specifications did not set forth the particular ingredients for the coatings; instead they left the companies to develop and

---

4 A copy of the District Court's Order is contained in the Petitioner's Appendix at 48-50.

5 The Court of Appeals' decision is contained in Petitioner's Appendix at 54-61.

supply their own products which met the specifications and conditions.

Specification No. 998-1128 was issued in 1978 and required that the material include an aluminum pigment so that it would be visible and the operator could see if the area was coated. Several companies, including BASF and Daubert, independently developed and supplied coatings to meet Specification 998-1128. Kaliardos, a self-taught chemist, also tried to supply such a coating to GM, but his materials were never accepted for use (A 1547, 1552).

Specification No. 998-2150 was issued in 1984 and specified a clear anti-corrosion coating. Fuller, National Starch and Beazer, as well as BASF and Daubert, supplied coatings to GM to meet that Specification. All of these coatings were developed independently by the suppliers, as each was a well-established chemical company with long-standing expertise.

As admitted by Kaliardos' expert witness Geeck, there were "thousands" if not "millions" of formulas and coatings which could meet the GM Specifications, and simply because one company's coating met the specification did not mean it was the same as another company's coating which also met the same specification (A 3331-33).

2. Daubert's Coatings

Two Daubert coatings were at issue in this case: *Nox-Rust X-151* and *Nox-Rust X-170*. They are wax-type rust control products and the ingredients were fully set forth in affidavits and attachments before the Magistrate, District Court and Court of Appeals (A 1553-65).

The Nox-Rust products were developed by Daubert using its own expertise to meet the GM Specifications.

The materials were tested by GM and found to meet its Specifications. The formulas for the aluminum colored X-151 coating and the clear X-170 coating remained the same from the first date each was approved by GM (1978 and 1984, respectively) (A 1553, ¶¶ 10-12).

3. The Patent Claims At Issue

In September, 1992, the parties stipulated to an Order which stated that a number of the claims of the patents-in-suit were not infringed by any of the Respondents' products. The stipulation was entered into after the Respondents had filed their motions for summary judgment and it became a "Partial Summary Judgment of Non-Infringement" (A 1909-10).[6]

Based on the Partial Summary Judgment Order, only the following claims remained at issue with respect to Daubert:

1) *U.S. Patent No. 3,959,530:*
   Claims 1 and 2 via the doctrine of equivalents;

2) *U.S. Patent No. 4,356,036:*
   Claims 1, 5 and 6 via literal infringement;
   Claims 1-6 via the doctrine of equivalents.

In the Partial Summary Judgment Order, plaintiff also dropped the allegations against Daubert's Nox-Rust X-170 coating under the '036 patent (A 1910, ¶ 9) which left only the allegations against the Nox-Rust X-151 coating under both patents and against the Nox-Rust X-170 coating under the '530 patent.

---

6 A copy of the stipulated Partial Summary Judgment is included in the Appendix to the Brief by Respondents GM, BASF and Fuller.

II. THE PETITION FOR WRIT OF CERTIORARI SHOULD BE DENIED

Kaliardos argues that his Petition should be granted for four reasons:

(1) The Magistrate erred in not finding that Kaliardos' evidence on the infringement issues created genuine issues of material fact sufficient to deny the Respondents' motions for summary judgment;

(2) The District Court:

(a) erred in adopting the Magistrate's Report and Recommendation and dismissing the action, and

(b) abused its discretion by denying Kaliardos' motion to supplement his responses with a new test report and/or by not allowing Kaliardos another oral hearing;

(3) The Court of Appeals erred in affirming the District Court's dismissal of the action; and

(4) The Federal Judiciary is using Rule 56 to "rid their dockets of difficult cases and/or litigants."

None of Kaliardos' arguments is valid and the Petition for Writ of Certiorari should be denied.

III. SUMMARY OF ARGUMENT

Kaliardos did not submit *any* evidence or support in this case which showed in any way that Daubert's two Nox-Rust coatings, X-151 and X-170, came within the scope of any of the claims of either of the two patents-in-suit. Kaliardos' main argument before the Magistrate, District Court and Court of Appeals was simply that since Daubert and the other suppliers supplied corro-

sion-preventative coatings to GM which met GM's Specifications, and since the patents-in-suit relate to corrosion-preventative coatings, then the suppliers' coatings must infringe the patents.

Even though Daubert and the other Respondents pointed out time after time that the ingredients of their coatings were not the same as those specified in the patent claims, Kaliardos, without any support or evidence, contended that either the ingredients were the "equivalents", or that the Respondents or others unknown must have secretly added additional ingredients to the coatings to bring them within the scope of the claims. This lack of evidence alone justified the grant of summary judgment in favor of all of the Respondents.

Since there was a lack of evidence to support Kaliardos' claims, the District Court and Court of Appeals properly granted and affirmed, respectively, summary judgment in favor of the Respondents.

Kaliardos' arguments concerning the District Court's refusal to accept a supplemental test report and conduct another oral hearing simply have no substance or merit. Similarly, there is not a scintilla of evidence to support in any way Kaliardos' claim that any of the judicial entities involved in this case are using Rule 56 to eliminate difficult cases or litigants from their dockets.

IV. ARGUMENT

A.

APPLICABLE LAW AND STANDARDS

1. Summary Judgment

The law concerning the standards to be applied under Rule 56, Fed. R. Civ. P., on summary judgment motions is well-established, and is exemplified by the standards set forth in the District Court's decision which granted the summary judgment motions by National Starch and Beazer. *Kaliardos, supra*, 777 F. Supp. at 543. A few of the principal points are as follows:

1. The burden on the moving party may be discharged by pointing out to the District Court that there is an absence of evidence to support the nonmoving party's case. *Celotex Corp.* v. *Catrett*, 477 U.S. 317, 325 (1986).

2. Once the moving party discharges that burden, the burden shifts to the nonmoving party to set forth specific facts showing a genuine triable issue. Fed. R. Civ. P. 56(e).

3. To create a genuine issue of material fact, the nonmovant must do more than present some evidence on a disputed issue, or raise some doubt as to the existence of a fact. There is no issue for trial unless there is sufficient evidence favoring the nonmoving party for a jury to return a verdict for that party. *Anderson* v. *Liberty Lobby, Inc.*, 477 U.S. 242, 249-50 (1986).

4. Summary judgment is as applicable in patent cases as in any other case. *Johnston* v. *IVAC Corp.*, 885 F.2d 1574, 1576-77 (Fed. Cir. 1989);

Avia Group Int'l Inc. v. *L.A. Gear California*, Inc., 853 F.2d 1557, 1560-61 (Fed. Cir. 1988).

2. Patent Infringement

Again, the law and standards concerning patent infringement are fully set forth in the published decision of the District Court, *Kaliardos*, *supra*, 777 F. Supp. 543. Some pertinent points are as follows:

1. The claims of a patent alone delimit the right to exclude others. Only the claims can be infringed. *Environmental Instruments Inc.* v. *Sutron Corp.*, 877 F.2d 1561, 1564 (Fed. Cir. 1989).

2. Every element of an asserted patent claim must be found in the accused product — either literally or by the doctrine of equivalents. For infringement, it must be shown that every element or its substantial equivalent must be found. If the accused product omits one of the ingredients or its equivalent in the patented combination, there is no infringement. *Pennwalt Corp.* v. *Durand-Wayland, Inc.*, 833 F.2d 931, 934-35, 949-50 (Fed. Cir. 1987); *Lemelson* v. *United States*, 752 F.2d 1538, 1551 (Fed. Cir. 1985); *Johnston* v. *IVAC*, *supra*, 885 F.2d at 1577; *Graver Tank & Mfg. Co.* v. *Linde Air Products Co.*, 339 U.S. 605, 608-10 (1950).

B.

THERE WAS NO EVIDENCE SUFFICIENT TO CREATE A TRIABLE ISSUE OF FACT REGARDING DAUBERT'S ALLEGED INFRINGEMENT

1. Nox-Rust X-170

Kaliardos had no evidence or support which showed in any way that Daubert's clear Nox-Rust X-170 coating

came within the scope of either of the patents-in-suit. This lack of evidence was commented on by the Magistrate and Court of Appeals.

The Nox-Rust X-170 material in particular did not infringe Kaliardos' patents because it did not contain any *zinc*, *perchlorethylene* or *chlorinated rubber* which were indicated as being found by Kaliardos in his tests of coatings on vehicle doors (A 1553 ¶¶ 15-17, 1567-68) and which were critical ingredients to allowance and thus infringement of the '530 and '036 patents.

2. Nox-Rust X-151

Kaliardos had no credible evidence which in any way connected any Daubert material to any of Kaliardos' tests involving certain vehicle doors. Supplemental interrogatory answers by GM indicated that GM was unable to determine which supplier's coatings were actually applied to those doors (A 1911-16). Also, Kaliardos' own tests of the coatings showed that they could *not* have been Daubert's X-151 product since the tests showed the presence of *zinc* and no aluminum — which is the opposite of the actual ingredients in the Nox-Rust X-151 coating (compare A 1567-68 with A 1553 ¶¶ 15-21 and 1559).

Moreover, Daubert's X-151 product was commercially sold in 1978-79 which is more than one year before the 1981 filing date of the '036 patent application and Daubert did not change the basic formulation thereafter (A 1553, ¶ 11). Thus, under 35 U.S.C. § 102(b), the '036 patent would be invalid if the X-151 product was deemed to come within the scope of its claims. (This is because that which infringes if later anticipates if earlier.)

3. The '530 and '036 Patents Have A Narrow Scope

The two patents-in-suit are narrow and have a limited scope. As decided by the District Court when it granted

summary judgment in 1991 to National Starch and Beazer, the '036 and '520 patents only cover very specific "recipes" of ingredients for coating compositions, *Kaliardos, supra*, 777 F.Supp. at 543. In particular, the claims contain limitations which were added to the claims in the Patent office and thus cannot be expanded to cover other ingredients.

The doctrine of prosecution history estoppel restricts the coverage of the two patents-in-suit to compositions which include the following specific ingredients or their equivalents:

i) *perchlorethylene*;

ii) *a specific ethylenediamine, namely N, N, N', N'-tetrakis (2-hydroxypropyl) ethylenediamine*; and

iii) *chlorinated rubber having a combined chlorine content of at least 66%.*

The formulations for the Nox-Rust X-151 and X-170 products (A 1553-65) show that *none* of these ingredients is present in either of Daubert's accused coatings. Also, tests conducted by an independent testing laboratory (Shrader Labs) *confirmed the absence of perchlorethylene and chlorinated rubber in the Daubert coatings* (A 1580-86).

4. Kaliardos' "Evidence"

All of Kaliardos' evidence was thoroughly examined and cross-examined during discovery. The depositions of all of Kaliardos' factual witnesses and technical experts were taken by Daubert and the other Respondents. Daubert also supplied Kaliardos with records which disclosed the ingredients of every commercial batch of the accused Nox-Rust X-151 and X-170 coatings made by Daubert (A 1553, ¶¶ 11-12). Daubert further had its actual products tested by an outside independent

testing laboratory who confirmed the lack of two critical ingredients required in the patented coatings (perchlorethylene and chlorinated rubber) (A 1580-86).

It was based on a consideration of all of this effort and evidence that the Magistrate and the District Court ruled in favor of Daubert, and the Court of Appeals affirmed.

Kaliardos had a full and fair opportunity over a four-year period to take discovery of Daubert and the other Respondents, analyze products of GM (the Respondents' customer of the accused products) and run scores of tests on various products and coatings. Yet with all of this time and discovery, Kaliardos did not come up with evidence sufficient to defeat a summary judgment motion. As found by the Magistrate, Kaliardos' case was based on speculation, conjecture and wishful thinking.

5. Kaliardos Could Not Show Infringement

Kaliardos wanted the Magistrate and Courts to believe that he single-handedly stopped the rusting problems of GM vehicles and that his two insignificant chemical recipe patents covered all of the rust preventative materials sold to GM over the last two decades. As noted above, Kaliardos' patents are very limited and only cover specific materials having certain ingredients that no one ever sold to GM and GM never used. There was simply no proof that any of Daubert's accused coatings ever included any of the key ingredients of Kaliardos' patent claims.

Kaliardos tried to overcome this deficiency by having his expert, Byrd, test several GM doors for families of compounds or somewhat similar ingredients, and then broadly claiming "equivalents," without any support. Kaliardos also submitted affidavit testimony by another expert witness, Geeck, who without any support or evi-

dence tried to assert that Daubert's records were false and that some unknown persons added additional ingredients to Daubert's commercial products which then brought them under the scope of the patents-in-suit. The Magistrate found that Geeck's assertions had no basis, and Geeck's Affidavit was stricken from the record (A 338-44).

The bottom line is that Kaliardos' case was based on speculation and conjecture. There is no real evidence supporting Kaliardos' case against Daubert and the other Respondents. There simply is no evidence to show that Daubert infringed either of the patents-in-suit, either literally or under the doctrine of equivalents.

6. Kaliardos' Own Expert Witnesses Testified As To The Lack Of Key Ingredients

The testimony of Kaliardos' two expert witnesses, Geeck and Byrd, showed that their tests and analyses of certain vehicle doors and other coatings indicated the *absence* of most of the claimed ingredients of the '036 and '530 patents. For example, Geeck testified that the Daubert formulations did *not* include:

a) *ethylenediamine* (A 3302),

b) *a nonionic surfactant* (A 3302),

c) *paraffin* (A 3303),

d) *a petroleum distillate having a boiling point ranging between 350° to 385° Fahrenheit* (A 3304-05),

e) *N, N, N', N'-tetrakis (2-hydroxypropyl) ethylenediamine* (A 3305-06),

f) *chlorinated rubber* (A 3319),

g) *an aromatic hydrocarbon resin having a softening point R&B of 70° to 140° C* (A 3319-20),

h) *neutral barium sulfonate* (A 3320-3322), and

i) *chlorinated solvent* (A 3321).

In fact, Geeck was forced to admit that the Daubert formulations were "different" and "not the same" as the Kaliardos formulations listed in the claims of the '036 and '530 patents (A 3314, 3323).

Byrd testified that he *never* performed any tests to determine if any of the alleged Daubert coatings contained a *chelating agent* which is one of the key ingredients of the '530 patent (A 971). As to certain vehicle doors in particular, Byrd did *not* find the presence of:

a) *paraffin wax* (A 3069),

b) *a nonionic surfactant* (A 3069),

c) *any chelating agent* (A 3070),

d) *N, N, N', N'-tetrakis (2-hydroxypropyl ethylenediamine* (A 3070),

e) *neutral barium sulfonate* (A 3072), or

f) *the combination of both a nonionic surfactant and a small amount of ethylenediamine* (A 3071, 3027).

The latter combination of ingredients ("f") is important since Kaliardos distinguished over the prior art during the prosecution of the '530 patent by stressing the combination of these two ingredients and is now estopped to deny their importance.[7]

As to claim 2 of the '036 patent and claim 2 of the '530 patent, both of which require the presence of spe-

---

[7] **In an amendment filed in the Patent Office on February 7, 1974 (A 1647), Kaliardos stated:**

> **Nowhere in any of the references is there any suggestion of the wax composition containing both a nonionic surfactant and the specific ethylenediamine claimed.**

cific percentages (amounts) of the listed ingredients, Kaliardos had *no proof whatsoever that Daubert's coatings meet the claimed amounts*. Despite all of the tests that he conducted, Byrd testified that he "didn't know" if Daubert infringed claim 2 of the '530 patent (A 3271-72) or claim 2 of the '036 patent (A 3274).

As a result, Kaliardos simply had no proof or evidence whatsoever that any of the Daubert products contained all of the elements or ingredients listed in the asserted '036 or '530 patent claims.

7. No Evidence Of Equivalents

Despite the fact that Kaliardos contended that Daubert's two coatings infringed one or more claims of the two patents-in-suit under the doctrine of equivalents, Kaliardos had no evidence to support that contention. Kaliardos presented no factual evidence that Daubert's coatings produced substantially the same function, worked in substantially the same way, and produced substantially the same results as the coatings specified in the '530 and '036 patent claims.

As indicated above, Kaliardos' expert testified that Daubert's coatings did not contain most of the claimed ingredients. Moreover, none of Kaliardos' witnesses ever conducted tests for equivalency (A 3049-3054, 3029, 3042).

C.

KALIARDOS' BELATED ATTEMPT TO FILE ANOTHER TEST REPORT IN OPPOSITION TO DAUBERT'S MOTION WAS PROPERLY DENIED

After discovery had been completed, after the Magistrate had heard and ruled on Daubert's and the other Respondents' Motions for Summary Judgment, and after

Kaliardos had filed his statement of objections to the Magistrate's Report and Recommendations, Kaliardos attempted to introduce additional evidence directed to the merits of the original issues involved in the summary judgment motions. The District Court denied that motion and that decision was upheld by the Court of Appeals (A 2937-39).

Kaliardos' alleged "new evidence" (a December 30, 1993 Test Report of Absolute Analytical Laboratories) was first presented to the District Court in January, 1994, which was far too late in the proceedings to be given any consideration. The Motions for Summary Judgment were filed in December, 1991, oral argument on the motions took place in October, 1992 (A 2435) and the Magistrate's Report and Recommendation was issued on October 7, 1993 (A 61). Kaliardos' "new evidence" was first presented to the Court in January, 1994 and comprised a test report dated in December, 1993. Kaliardos' only excuse for not conducting the tests earlier was lack of money — no other explanation was given.

Moreover, the evidence which was the subject of the "belated supplement" by Kaliardos did not relate to Daubert at all and only consisted of one inconclusive test report that was neither verified or supported by an affidavit. Thus, the Report was insufficient under Rule 56(e).

It was for these reasons that the District Court denied Kaliardos' motion for leave to supplement his response and submit the test report (A 2937-39). That denial was proper under the law and there was no abuse of discretion.

D.

THE DISTRICT COURT PROPERLY DENIED KALIARDOS' REQUEST FOR ANOTHER ORAL HEARING

Kaliardos had a complete and lengthy oral hearing relative to all of the motions for summary judgment. That hearing took place before the Magistrate in October, 1992 after all of the discovery had been completed and the issues had been fully briefed by the parties. In addition, Kaliardos earlier had several oral hearings on motions before that same Magistrate.

The fact that the District Court did not grant another oral hearing, namely a hearing on Kaliardos' objections to the Magistrate Judge's Report and Recommendations on the summary judgment issues, was not an abuse of discretion and did not constitute reversible error. There is simply no requirement for such an oral hearing at that point; instead the matter is left to the Court's discretion. The Court is only required to make a "de novo determination", which it did (A 1-2). See *United States* v. *Raddatz*, 447 U.S. 666, 673-74, 65 L.Ed.2d 424, 431-32, 100 S.Ct. 2406, 2411 (1980).

V. CONCLUSION

The Petition for a Writ of Certiorari should be denied. None of Kaliardos' reasons for grant of the Petition have any merit. Kaliardos simply did not have sufficient evidence of infringement relating to any of the Respondents to allow the case to go to trial. The decisions by the Magistrate, District Court and Court of Appeals all were sufficient under the law in view of Kaliardos' lack of evidence.

Kaliardos also does not have any support for his arguments that the District Court abused its discretion by denying Kaliardos' motion to supplement his responses with a new test report, and by not allowing Kaliardos another oral hearing. Similarly, Kaliardos has no support whatsoever relative to his argument that the Courts in this case, as well as Courts generally, use Rule 56 to rid themselves of undesirable cases and litigants.

Respectfully submitted,

BROOKS & KUSHMAN P.C.

By: /s/ JOHN A. ARTZ
Counsel of Record

1000 Town Center,
Twenty-Second Floor
Southfield, Michigan 48075
(810) 358-4400

Attorney for Respondent
Daubert Industries, Inc.

Dated: April 20, 1995

FILED
JUN 9 1995
OFFICE OF THE CLERK

No. 94-1574

IN THE
SUPREME COURT FOR THE UNITED STATES
OCTOBER TERM, 1994

NICOLAS KALIARDOS,
Petitioner,

v.

GENERAL MOTORS CORPORATION,

BASF CORPORATION,

H.B. FULLER COMPANY, and

H.B. FULLER AUTOMOTIVE PRODUCTS, INC.,

Jointly and severally,
Respondents

and

DAUBERT INDUSTRIES, INC.,
Respondent.

On Petition for a Writ of Certiorari to the United States Court of Appeals for the Federal Circuit

Petitioner Kaliardos' Supplemental Index

Nicolas Kaliardos
Pro Se, Petitioner
405 Moross Road
Grosse Pointe Farms,
MI 48236
(313) 884-6537

97 pp

TABLE OF CONTENTS

Pg.

Summary of lab results,
10/17/89, Byrd..... 1

Summary of lab results,
10/17/89, Byrd..... 4

Summary report,
02/26/90, Byrd..... 7

Summary of lab results,
10/25/91, Byrd.....25

Affidavit of Patricia Marek,
11/27/91.....27

Affidavit of Nicolas Kaliardos,
12/19/91.....33

Affidavit of David Byrd,
12/20/91.....41

Affidavit of Paul S. Epstein,
12/27/91.....45

Summary of lab results,
12/30/91, Byrd.....47

Affidavit of Daryl P. Strandberg,
12/27/91.....50

Affidavit of David Byrd,
01/02/92.....54

Affidavit of David W. Byrd,
01/02/92.....56

Summary of lab results,
07/14/92, Byrd.....60

Comments of David W. Byrd,
03/06/92, Byrd.....63

Affidavit of James P. Johnson,
05/ 92.....65

Affidavit of Franklin C. Schoonner,
08/21/92.....68

Summary of lab results,
09/17/92.....71

Affidavit of Darrell W. Ridling,
09/ /92.....74

Affidavit of David W. Byrd,
10/19/92.....77

Affidavit of Peter O. Warner,
10/16/92.....80

Summary of Equivalence Testing,
12/30/93, Byrd.....82

Fuller, Material Safety Data Sheet,
WC-2291.....89

Fuller, Material Safety Data Sheet,
WC-2291-P.....91

Daubert, Material Safety Data Sheet,
X-170.....93

ABSOLUTE ANALYTICAL LABORATORY
1030-D North Crooks Road
Clawson, Michigan 48017
313-435-5100

10/17/89

ALEX RHODES,P.C.
24700 NORTHWESTERN HWY. STE 412
SOUTHFIELD,MI 48074
ATTN:ALEX RHODES

RE: SUMMARY OF RECENT LABORATORY RESULTS WITH RESPECT TO PATENTS #3,959,530 & 4,356,036.

A summary of our recent test results on an Inmont formulation and recently obtained field car door samples tabulated on the attached sheet. This report supersedes previous reports on this subject.

We note that further tests are in progress to on other doors or sealants obtained in the field.

Absolute Analytical Laboratory,

David W. Byrd
Analytical Chemist

aka
enclosures

ABSOLUTE ANALYTICAL LABORATORY
1030-D North Crooks Road
Clawson, Michigan 48017
313-435-5100

ALEX RHODES,P.C.
LAB I.D.# 89/01023/84

1.0 ANALYTICAL SUMMARY

1.1

PARAMETER	1983 CIERA-FRONT PASS. DOOR	METHOD
VIN	:1C3AJ19E2DD406799	FIELD
MICROCRYSTALLINE WAX	:PRESENT	IR
HYDROCARBON RESIN	:PRESENT	IR
CHLORINATED RUBBER	:PRESENT	PY/GC/ECD
ALUMINIUM	:PRESENT	AAS
ZINC	:NOT DETECTED	AAS
BARIUM	:PRESENT TRACE	AAS
SURFACTANT	:PRESENT	RESIN EXCLUSION
CHELATING AGENT	:IN PROGRESS	*

1.2

PARAMETER	1984 CAVALIER- PASS. DOOR	METHOD
VIN	:1G1AE77PSEJ252192	FIELD
MICROCRYSTALLINE WAX	:PRESENT	IR
RESIN	:PRESENT	IR
CHLORINATED RUBBER	:PRESENT	PY/GC
ALUMINIUM	:PRESENT	AAS
ZINC	:PRESENT	AAS
BARIUM	:PRESENT	AAS
SURFACTANT	:PRESENT	MBAS
CHELATING AGENT	:IN PROGRESS	*

* Further tests in progress.

ABSOLUTE ANALYTICAL LABORATORY

ABSOLUTE ANALYTICAL LABORATORY
1030-D North Crooks Road
Clawson, Michigan 48017
313-435-5100

ALEX RHODES,P.C.
LAB I.D.# 89/01023/84

3/3

1.0 ANALYTICAL SUMMARY

1.3

PARAMETER	1984 SKYHAWK PASS. DOOR	METHOD
VIN	:64AS2703EK526551	FIELD
MICROCRYSTALLINE WAX	:PRESENT	IR
HYDROCARBON RESIN	:PRESENT	IR
CHLORINATED RUBBER	:PRESENT	PY/GC/ECD
ALUMINIUM	:NOT PRESENT	AAS
ZINC	:PRESENT	AAS
BARIUM	:PRESENT TRACE	AAS
SURFACTANT	:PRESENT	MBAS
CHELATING AGENT	:IN PROGRESS	*

1.4

BASF

PARAMETER	INMONT FORMULATION 998-1128	METHOD
VIN	:NOT APPLICABLE	
MICROCRYSTALLINE WAX	:PRESENT	IR
HYDROCARBON RESIN	:PRESENT	IR
CHLORINATED RUBBER	:PRESENT	PY/GC/ECD
ALUMINIUM	:PRESENT	AAS
ZINC	:NOT DETECTED	AAS
BARIUM	:PRESENT TRACE	AAS
SURFACTANT	:PRESENT	SEE 1023/28
CHELATING AGENT	:PRESENT	SEE 1023/28

* Further tests in progress.

ABSOLUTE ANALYTICAL LABORATORY
1030-D North Crooks Road
Clawson, Michigan 48017
313-435-5100

10/17/89

ALEX RHODES,P.C.
24700 NORTHWESTERN HWY. STE 412
SOUTHFIELD,MI 48074
ATTN:ALEX RHODES

RE: SUMMARY OF RECENT LABORATORY RESULTS WITH RESPECT TO PATENTS #3,959,530 & 4,356,036.

A summary of our recent test results on an Inmont formulation and recently obtained field car door samples tabulated on the attached sheet. This report supersedes previous reports on this subject.

We note that further tests are in progress to on other doors or sealants obtained in the field.

Absolute Analytical Laboratory,

David W. Byrd
Analytical Chemist

aka
enclosures

ABSOLUTE ANALYTICAL LABORATORY
1030-D North Crooks Road
Clawson, Michigan 48017
313-435-5100

CLIENT :ALEX RHODES,P.C.
SAMPLE DESCRIPTION :ANTI-CORROSION COATINGS (2)
ANALYSIS REQUESTED :DETERMINATION OF THE PRESENCE OF AROMATIC AND CHLORINATED COMPOUNDS .
LABORATORY # :92.01023.239

ANALYTICAL SECTION

1.0 SAMPLE PREPARATION
1.1 SAMPLE DESCRIPTION TABLE

SAMPLE DESCRIPTION	VIN
1987 CELEBRITY RIGHT FRONT DOOR	1G1AW51R8H6211705
1988 OLDSMOBILE DELTA 88 LEFT FRONT DOOR	1G3HN54C7JM316919

1.1.2 The door samples were cut with a mechanical reciprocating saw to expose the anti-corrosion wax coating material located in the base of the doors. The wax coating material samples were obtained by collecting scrapings of the wax coating material from the door and transferring the samples to sample vials. All materials which came into contact with the samples were first cleaned using acetone or high temperature pretreatment in a muffle furnance at 550 C inorder to remove interfering or contaminating volatile chemicals. The containerized samples were incubated at 90 C for approximately one hour. Desorbed volatiles were obtained by puncturing the container and obtaining a sample of the headspace volume which was subsequently injected into the gas chromatograph. The operational conditions of the gas chromatograph were:

T(inject) : COC C T(column) : program T(detect): 200 C
T(initial): 40 C T(rate) : 5 C T(final) : 150 C
T(hold) : 5 MIN Flow mlsec-@C:8.0
Detector 1: PID Detector 2: HECD
Column: 530 um x 30 m. 3.0 um DB624.

The resulting chromatograms were compared to standards of aromatic hydrocarbons and chlorinated hydrocarbons for identification purposes.

ABSOLUTE ANALYTICAL LABORATORY
1030-D North Crooks Road
Clawson, Michigan 48017
313-435-5100

CLIENT :ALEX RHODES,P.C.
SAMPLE DESCRIPTION :ANTI-CORROSION COATINGS (2)
ANALYSIS REQUESTED :DETERMINATION OF THE PRESENCE OF AROMATIC AND CHLORINATED COMPOUNDS
LABORATORY # :92.01023.239

2.0 TEST RESULTS
2.1 TABULATED DATA FOR AROMATIC HYDROCARBONS

SAMPLE DESCRIPTION	AROMATIC COMPOUNDS	COMMENTS
DELTA 88	DETECTED	Benzene, toluene, ethylbenzene, xylenes
CELEBRITY	DETECTED	Benzene, toluene, ,xylenes

2.2 TABULATED DATA FOR CHLORINATED HYDROCARBONS

SAMPLE DESCRIPTION	CHLORINATED COMPOUNDS	COMMENTS
DELTA 88	DETECTED*	Methylene chloride, perchloroethylene
CELEBRITY	DETECTED	Perchloroethylene

3.0 DISCUSSION
3.1 Our tests show that aromatic hydrocarbons such as benzene, toluene, ethylbenzene and xylenes are found in the wax based coatings present in the referenced doors. Additionally, our test show that volatile chlorinated hydrocarbons such as perchloroethylene, methylene chloride and other chlorinated hydrocarbons are present in the reference wax coating materials obtained from the doors submitted to our laboratory. We are in the process of further testing to provide addition identification of other chlorinated and aromatic compounds which we have detected.

* indicates that there are other aromatic or chlorinated compounds which are currently being identified.

ABSOLUTE ANALYTICAL LABORATORY
1030-D North Crooks Road
Clawson, Michigan 48017
313-435-5100

02/26/90

ALEX RHODES,P.C.
24700 NORTHWESTERN HWY. STE 412
SOUTHFIELD,MI 48074
ATTN:ALEX RHODES,P.C.

RE:SUMMARY REPORT. BASF ANTI-CORROSION WAX COATING S51Z001

This is a summary of my review of BASF anticorrosion wax coating S51Z001. The materials used for preparing this summary consist of the following:

1. Absolute Analytical Laboratory analyses of a liquid sample of BASF anticorrosion wax coating S51Z001.
2. Absolute Analytical Laboratory analyses of wax based scrapings taken from General Motors vehicles.
3. BASF and General Motor documents.
4. Technical literature.
5. The testimony and depositions of BASF chemists Ramesh and Fujimoto.

The purpose of this review is to determine whether the ingredients, or equivalents, specified in claim 1 of U.S. Patent 3,959,450 and claim 1 of U.S. Patent 4,356,036 are present in BASF anticorrosion wax coating S51Z001. A summary of the review contents is presented which is followed by the supporting review.

Absolute Analytical Laboratory,

David W. Byrd
Analytical Chemist

ABSOLUTE ANALYTICAL LABORATORY
1030-D North Crooks Road
Clawson, Michigan 48017
313-435-5100

REVIEW SUMMARY

After reviewing information and analytical data regarding the composition of BASF anticorrosion wax coating S51Z001, it is my opinion the ingredients or ingredient equivalents which are specified in claims 1 of U.S. Patent 3,959,450 and of U.S. Patent 4,356,036 are present in BASF anticorrosion wax coating S51Z001. The following is a tabular summary of the ingredients, or ingredient equivalents, which are specified in claims 1 of U.S. Patent 3,959,450 and of U.S. Patent 4,356,036 and are present in BASF anticorrosion wax coating S51Z001.

U.S. PATENT NO. 3,959,530

INGREDIENT	BASIS FOR OPINION
Paraffin	1. Absolute Analytical Laboratory (AAL) analyses of BASF liquid sample S51Z001 2. General Motors,BASF, and BASF supplier Material Safety Data Sheets (MSDS) 3. BASF laboratory analysis of BASF S51Z001
Microcrystalline Wax	1. Absolute Analytical Laboratory (AAL) analyses of BASF liquid sample S51Z001 2. General Motors,BASF, and BASF supplier Material Safety Data Sheets (MSDS) 3. BASF laboratory analysis of BASF S51Z001
Perchloroethylene	1. Absolute Analytical Laboratory (AAL) analyses of BASF liquid sample S51Z001 2. AAL analyses of anticorrosion wax coatings obtained from 1984 Olds Cierra 3. BASF laboratory analysis of BASF S51Z001
Petroleum Distillate	1. General Motors,BASF, and BASF supplier Material Safety Data Sheets (MSDS) 2. American Society for Testing and Materials (ASTM) "Manual on Hydrocarbon Analysis" Table I
Surfactant	1. General Motors,BASF, and BASF supplier Material Safety Data Sheets (MSDS) 2. Chemical Abstracts Service (CAS) reference search Stearic Acid/surfactant

ABSOLUTE ANALYTICAL LABORATORY
1030-D North Crooks Road
Clawson, Michigan 48017
313-435-5100

U.S. PATENT NO. 3,959,530

INGREDIENT	BASIS FOR OPINION
Surfactant (cont.)	3. Absolute Analytical Laboratory (AAL) report on GM MSDS of 998-1128. 4. Literature review of commercial surfactants. 5. AAL analyses of anticorrosion wax coatings obtained from auto scrapings
elating Agent	1. General Motors,BASF, and BASF supplier Material Safety Data Sheets (MSDS) 2. Chemical Abstracts Service (CAS) reference search Stearic Acid/ligand and P.P. Methy Diamine/ligand 3. Absolute Analytical Laboratory (AAL) report on BASF liquid sample S51Z001 4. Literature review of ligands/chelating agents.

U.S. PATENT NO. 4,356,036

INGREDIENT	BASIS FOR OPINION
Aluminium or Zinc Paste	1. Absolute Analytical Laboratory (AAL) analyses of BASF liquid sample S51Z001 2. General Motors,BASF, and BASF supplier Material Safety Data Sheets (MSDS) 3. AAL analyses of anticorrosion wax coatings obtained from 1984 Olds Cierra
Microcrystalline Wax	1. Absolute Analytical Laboratory (AAL) analyses of BASF liquid sample S51Z001 2. General Motors,BASF, and BASF supplier Material Safety Data Sheets (MSDS) 3. BASF laboratory analysis of BASF S51Z001

ABSOLUTE ANALYTICAL LABORATORY
1030-D North Crooks Road
Clawson, Michigan 48017
313-435-5100

INGREDIENT	BASIS FOR OPINION
Aromatic Hydrocarbon Resin; R&B 70-140C	1. BASF supplier (Neville Co.) MSDSs and product literature. 2. General Motors,BASF, and BASF supplier Material Safety Data Sheets (MSDS) 3. BASF laboratory analysis of BASF S51Z001 4. BASF formula cards and batch information 5. Absolute Analytical Laboratory (AAL) analyses of BASF liquid sample S51Z001
Chlorinated Rubber having a combined chlorine content of at least 66%	1. AAL analyses of BASF liquid sample S51Z001 2. AAL analyses of anticorrosion wax coatings obtained from 1984 Olds Cierra
Barium Sulfonate	1. AAL analyses of BASF liquid sample S51Z001 2. AAL analyses of anticorrosion wax coatings obtained from 1984 Olds Cierra 3. AAL analyses of BASF liquid sample S51Z001
Chlorinated Solvent	1. AAL analyses of BASF liquid sample S51Z001 2. AAL analyses of anticorrosion wax coatings obtained from 1984 Olds Cierra 3. BASF laboratory analysis of BASF S51Z001
Aromatic Hydrocarbon Solvent	1. General Motors,BASF, and BASF supplier Material Safety Data Sheets (MSDS) 2. American Society for Testing and Materials (ASTM) "Manual on Hydrocarbon Analysis" Table I
Mineral Spirits Solvent	1. General Motors,BASF, and BASF supplier Material Safety Data Sheets (MSDS) 2. American Society for Testing and Materials (ASTM) "Manual on Hydrocarbon Analysis" Table I 3. BASF formula cards and batch information

ABSOLUTE ANALYTICAL LABORATORY
1030-D North Crooks Road
Clawson, Michigan 48017
313-435-5100

ALEX RHODES,P.C.
LAB I.D.# 90/01023/105

SUMMARY REPORT OF BASF ANTI-CORROSION WAX COATING S51Z001

1.0 PERCHLOROETHYLENE

1.1 Two types of wax based antirust samples were analysed by our laboratory. One type consisted of scrapings of various wax based antirust samples obtained from the interior surfaces of car doors. The second type consisted of a production line sample of S51Z001 (Inmont 998-1128). Perchloroethylene was detected in anticorrosion waxes in ur laboratory using a technique known as dual column gas chromatography with the electron capture detector (see Byrd deposition exhibit 19,81.110). The sensitivity of this technique is particularly important for these types of samples when one considers sensitivity and selectivity. The sensitivity and the selectivity of the electron capture detector allows for detection limits three-five orders of magnitude greater than that obtainable by the mass spectrometer detector (see enclosure #1).

1.1.1 Based upon BASF Laboratory tests (see Ramesh deposition) the sample of aluminized anticorrosion wax tested at the BASF laboratory was diluted 1:10 in hexane. Approximately two (2 ul) microliters of the mixture was injected into the gas chromatograph/mass spectrometer.

ABSOLUTE ANALYTICAL LABORATORY
1030-D North Crooks Road
Clawson, Michigan 48017
313-435-5100

Because the density of hexane is 0.6603 (see enclosure #2) two microliters of the solvent would have a mass of approximatley 1.32 milligrams (2 ul x 0.6603 mg/ul=1.32 mg) of which ten percent is the sample is the sample. This amounts to 132 micrograms (1.32 mg x .1= 0.132 mg or 132 micrograms) of sample injected. Once injected the sample would be further split (typically 1:50-100) reducing the effect amount going to the mass spectrometer to 1.32- 2.64 micrograms (130 micrograms / 50-100 = 1.32-2.64 micrograms). Using a routine detection limit of 10 nanograms for the mass spectrometer, the method used by BASF could only detect concentrations of perchloroethylene which were greater than 7,600 parts per million (ppm) or 0.76 % perchloroethylene in the sample. This is an optimum estimate based upon 100 percent dissolution of the sample which was not reported (Ramesh deposition).

1.1.2 By contrast the method used in our laboratory utilized samples having a mass in the range of 0.1-0.5 grams which were sealed in a vial with a volume of approximately 1.5 ml. The sealed vial was heated to liberate vapors of perchloroethylene present afterwhich a

ABSOLUTE ANALYTICAL LABORATORY
1030-D North Crooks Road
Clawson, Michigan 48017
313-435-5100

sample ~0.5-1 ml taken for analysis. A conservative estimate of effective sample mass injected would be 33 mg (0.5ml/1.5ml x 100mg=33 mg). Since picogram detection limits are routine with the electron capture detector (see enclosure #1&3) then one could conservatively expect to be able to detect 30.3 parts per trillion (ppt) perchloroethylene (10^{-12} grams of perchloroethylene-detection limit/$3.3x10^{-2}$ grams of sample= 0.000000000030 or 30ppt). This represents over one hundred million times greater sensitivity than could be achieved using the BASF method. Our detections limit along with dual column confirmation by gas chromatography is an appropriate method of analysis and identification when the analyte is below the detection limit of the mass spectrometer.

1.1.3 We note that the ECD method was not previously used until the need arose to analyse low levels of perchloroethylene in the scraping samples taken from the G.M. doors. Our prior reports (see Byrd deposition exhibit #6) did not use the ECD technique because electron capture detector was not available and installed in our gas chromatograph until after these reports were issued, therefore we were not able to carry out this kind analysis.

ABSOLUTE ANALYTICAL LABORATORY
1030-D North Crooks Road
Clawson, Michigan 48017
313-435-5100

1.1.4 The analysis performed by the BASF laboratory with the gas chromatograph electron capture detector does not provide evidence that perchlcroethylene and toluene coelute.

Tests in our laboratory with toluene and perchloroethylene performed on a DB-624 column indicate that toluene and perchloroethylene do not coelute and are well resolved (see enclosure #4). Our results were further substantiated by a telephone conference with the column manufacturer (J & W Scientific;Redondo,California). The manufacturer stated that toluene and perchloroethyene do not coelute under the analytical conditions used. The column manufacturer further stated that toluene would not interfer due to its low relative responce to the electron capture detector. Additional information obtained from our tests indicate that toluene at very high concentrations (ca. 1-2 % toluene) result in extremely small signals from the electron capture detector corresponding to less than 20 microvolts (see enclosure #4). Small responses of the electron capture detector to high concentrations of toluene should be borne in mind when examining the BASF laboratory results with the electron capture detector.

ABSOLUTE ANALYTICAL LABORATORY

ABSOLUTE ANALYTICAL LABORATORY
1030-D North Crooks Road
Clawson, Michigan 48017
313-435-5100

Our laboratory results show that it is not possible for toluene to produce the signal reported by BASF to the toluene standard (exhibit #5) which depicts signals of ~750 millivolts to corresponding to "0" amount of standard of toluene. Rather the BASF results indicate contamination of the BASF standard with perchloroethylene. Another implication of this is that the BASF laboratory was detecting perchloroethylene in the anticorrosion sample (see enclosure #6) as evidenced by the peak at 3.497 minutes. Lack of rigorous methodology led to the improper conclusion that toluene and perchloroethylene coelute (see Ramesh deposition exhibit #1).

1.1.5 The report issused by Chemical Industrial Services, Inc. on March 24, 1982, it is not inconsistent our test results with respect to perchloroethylene or the analytical capabilities of an industrial testing lab such as Chemical Industrial Services, Inc. It is only in recent years that analytical techniques and information were available regarding trace and ultratrace determinations. This type of analysis is a highly specialized area and not the province of industrial

BEST AVAILABLE COPY

ABSOLUTE ANALYTICAL LABORATORY
1030-D North Crooks Road
Clawson, Michigan 48017
313-435-5100

laboratories, such as Chemical Industrial Services, Inc. We further note that the type of instrumentation required to do this analysis was not present at my visit to Chemical Industrial Services, Inc. Lastly, upon explaining the technique to Mr. Ray of Chemical Industrial Services, Inc., he concurred with the findings of our laboratory.

2.0 PETROLEUM DISTILLATES AND AROMATIC SOLVENTS

2.1 The presence of petroleum distillates and aromatic solvents in the BASF coating is disclosed by the MSDS's of BASF suppliers. The patent 3,959,450 specifies that a petroleum distillate having a boiling point range between 350-380 F. Patent # 4,356,036 specifies an aromatic hydrocarbon solvent. The Material Safety Data Sheets (MSDS) supplied by BASF specify solvents having aromatic constituents as major constituents. The Material Safety Data Sheets (MSDS) supplied by BASF specify solvents having major constituents that are petroleum derived distillates having a boiling point range between 350-380 F.

2.1.1 The boiling points of various solvents used by BASF in the formulation of the S512001 ANTI-RUST (see enclosure #7) as called out

ABSOLUTE ANALYTICAL LABORATORY
1030-D North Crooks Road
Clawson, Michigan 48017
313-435-5100

in the formulary cards were compared to the corresponding BASF MSDS's (see enclosure #9) reported boiling point data. The solvents, when generic solvent descriptions were used, were also compared to an American Society of Testing and Materials (ASTM) "Manual of Hydrocarbon Analysis" hydrocarbon characteristic table (see enclosure #8). Our results our tabulated below:

BASF CODE #	MSDS BP (F)	MANUAL BP RANGE (F)	COMMENT
SP0624	313-355	258-384	UNION CHEMICAL
SP0603	310-360	-	ASHLAND CHEMICAL CAS:8052-41-3
SP0604	310-360	258-384	ASHLAND CHEMICAL
PZ0165	313-388	303-384	UNITED STATE BRONZE POWDERS
SP0604	325-384	303-384	SHELL

2.1.2 We note that the "Manual of Hydrocarbon Analysis" indicates that the boiling point of a C11 hydrocarbons, such as used in Union Chemicals Super High Flash Naptha (BASF additive code SP0624), has a listed boiling point of 384 F. This is not reflected in the MSDS corresponding to SP0624, however, this component would have such a boiling point. The manual likewise indicates that the boiling point of a C10 hydrocarbons, such as used in Union Chemicals Super High

ABSOLUTE ANALYTICAL LABORATORY
1030-D North Crooks Road
Clawson, Michigan 48017
313-435-5100

Flash Naptha (BASF additive code SP0624), has a listed boiling point of 353 F. Similar examples can be found in the other listed BASF MSDSs.

2.1.3 The aromatic hydrocarbons content of solvents used by BASF in the formulation of the S512001 ANTI-RUST (see enclosure #9) as called out in the formulary card were compared to the corresponding MSDS's aromatic hydrocarbons data. The solvents, when generic solvent descriptions were supplied, were also compared to an ASTM hydrocarbon characteristic table (see enclosure #8). Our results our tabulated below:

BASF CODE #	ASTM MANUAL	MSDS DATA %	AROMATIC TYPE
SP0624	PRESENT	0-10	XYLENES
UNION CHEM.	PRESENT	20-45	TRIMETHYLBENZENE
AMSCO SOLV	PRESENT	NA	CUMENE
1435	PRESENT	95	TOTAL AROMATICS
	PRESENT	NA	MONOBENZENES
	PRESENT	NA	AROMATIC NAPHTHENES

ABSOLUTE ANALYTICAL LABORATORY
1030-D North Crooks Road
Clawson, Michigan 48017
313-435-5100

BASF CODE #	ASTM MANUAL	MSDS DATA %	AROMATIC TYPE
SPO604	PRESENT	~ 4	TRIMETHYLBENZENES
ASHLAND	PRESENT	NA	MONOBENZENES
MINERAL SPTS.	PRESENT	NA	AROMATIC NAPHTHENES
SPO604	PRESENT	10-11	AROMATICS
SHELL	PRESENT	NA	MONOBENZENES
MINERAL SPTS.	PRESENT	NA	AROMATIC NAPHTHENES

2.1.4 In summary the tables indicate that solvents used by BASF in the formulation of the S51Z001 ANTI-RUST (see enclosure #7) as called out in the formulary cards contain mineral spirits, aromatic hydrocarbons, and petroleum derived distillates with constituents with boiling points between 350-380 F. We note that the aromatic components are not present in "trace" quantities, rather the constituents represent major components. Another important consideration is the use of solvent compatable with the Ross Wax 160 (see enclosure #10) which the manufacturer identified as hot naphtha, xylene, toluene, carbitol, isopropanol or trichloroethylene. The first three of the listed solvents are aromatic hydrocarbons or contain aromatic hydrocarbons (eg.naphtha) and appear on the forementioned tables.

ABSOLUTE ANALYTICAL LABORATORY
1030-D North Crooks Road
Clawson, Michigan 48017
313-435-5100

3.0 SURFACTANT

3.1 The evidence presented in numerous BASF MSDSs, laboratory results and in the scientific and industrial literature indicate that a surfactant or surfactants are present in the BASF formulation S512001 ANTI-RUST.

3.1.1 The MSDS forms of GM and BASF suppliers (see enclosure #11) list stearic acid as one of the ingredients. Examples of stearic acids use are indicated by the listing of stearic acid by a chemical standards supplier (see enclosure #12). A search of chemical abstracts (see enclosure #13) identified several references with respect to stearic acids use as a surfactant.

3.1.2 Although stearic acid is classified as a anionic surfactant, never the less it is a surfactant and produces the desired surface energy changes with respect to manner of use and efficacy when compared to nonionic surfactants.

ABSOLUTE ANALYTICAL LABORATORY
1030-D North Crooks Road
Clawson, Michigan 48017
313-435-5100

4.0 CHELATING AGENTS

4.1 Examination of the ingredients listed on the submitted MSDS forms used by GM and BASF suppliers (see enclosure #11,14) list stearic acid (C.A.S. # 57-11-4) and P.P. Methyl Diamine (C.A.S. # 101-77-9) as ingredients. Both chemicals possess ligands (see enclosure #15,see Byrd deposition exhibit #106) which are capable of binding to metals.

4.1.1 Stearic acid is shown to be chelating agent in references through chemical abstracts searches (see enclosure #15). The carboxyl group on the stearic acid is the ligand which binds to the metal (see Byrds deposition 106a). The alkyl portion of the stearic acid would embed in the wax matrix and the ligand portion would locate on the external surface of the wax where the ligand could bind to metal.

4.1.2 P.P. Methyl Diamine has been shown to be a chelating agent in references through chemical abstracts and literature searches (see enclosure #15,see Byrd deposition exhibit #106). The amine groups of P.P. Methyl Diamine are the ligands which bind to metal (see Byrds deposition 106).

4.1.3 Based upon the literature sited the there is ample evidence that indicate stearic acid (C.A.S. # 57-11-4) and P.P. Methyl Diamine

ABSOLUTE ANALYTICAL LABORATORY
1030-D North Crooks Road
Clawson, Michigan 48017
313-435-5100

(C.A.S. # 101-77-9) can bind metals. In this way they are used and function in a similar fashion to N,N,N´,N´-tetrakis (2-hydroxypropyl) ethylenediamine.

5.0 AROMATIC HYDROCARBON RESINS

5.1 The coating of Patent # 4,356,036 includes an aromatic hydrocarbon resin. Our review of the Material Safety Data Sheets (MSDS) supplied by BASF lists several products having hydrocarbon resins as the primary constituent. BASF used an assortment of the hydrocarbon resins which had softening points between 70-140 C.

5.1.1 We note that all the BASF MSDS´s which have been supplied, indicate that BASF used hydrocarbon resins with a R&B softening point between 70-140C. A tabulation of hydrocarbon resin and their respective ring and ball softening temperatures are given below:

BASF CODE #	RING & BALL (C)	SUPPLIER/TYPR
RR0109	103	NEVILLE CHEMICAL NEVCHEM 100 RESIN
RR0152	105	NEVILLE CHEMICAL LX-685 125 RESIN
G-112	90-102	HERCULES

ABSOLUTE ANALYTICAL LABORATORY
1030-D North Crooks Road
Clawson, Michigan 48017
313-435-5100

.1.2 An infrared spectra obtained by BASF chemist Hiro Fujimoto of ASF a 1987 batch sample of S51Z001 ANTI-RUST indicates the presence f an aromatic hydrocarbon resin. This was also the tesitmony of BASF hemist Hiro Fujimoto with respect to the presence of an aromatic ydrocarbon resin in the BASF a 1987 batch sample of S51Z001 ANTI-UST.

.1.3 The analysis of BASF a 1987 batch sample of S51Z001 ANTI-RUST onducted under BASF chemist Ramesh (see Ramesh deposition exhibit) determine the presence of chlorinated rubber using pyrolysis/gas romatography/mass spectrometry (py/gc/ms) indicates the presence of veral aromatic hydrocarbon pyrolytic products which further dicates the presence of an aromatic hydrocarbon resin.

1.4 The BASF formula cards indicate that the BASF code 0152 hydrocarbon resin (Neville LX-685, 125) was used from 1979 til the line was abandoned S51Z001 ANTI-RUST. This further indicates t an aromatic hydrocarbon resin was used with a R&B between 70-140 rom 1979 -1987.

ABSOLUTE ANALYTICAL LABORATORY
1030-D North Crooks Road
Clawson, Michigan 48017
313-435-5100

6.0 BARIUM SULFONATE

6.1 Our laboratory testing indicate that barium was found in an Inmont formulation and in some wax scapings found in the field.

6.1.1 Barium sulfonate is composed of barium and sulfonate salts. For barium sulfonate to be present both barium and sulfur elements must be detected. Our previous tests indicate the presence of barium, a more recent test indicates that sulfur is present in the Inmont sample 998-1128.

6.1.2 Barium sulfonate is commonly regarded as a surfactant (enclosure #16). Sulfonates listed on MSDSs for GM formulation 998-1128 ANTI-RUST calcium sulfonate, lead sulfonate and calcium lignosulfonate.

7.0 CHLORINATED RUBBER

7.1 Our laboratory testing indicates that chlorinated rubber with a combined chlorine content of at least 66 % was present in the BASF S512001 formulation and in wax scapings from GM automobiles taken in the field. This is based upon analysis (Byrd deposition exhibit #19) performed with in our laboratory with a chlorinated rubber with a combined chlorine content of at least 66 % commercially available as Parlon (S10) manufactured by Hercules Inc..

ABSOLUTE ANALYTICAL LABORATORY
1030-D North Crooks Road
Clawson, Michigan 48017
313-435-5100

OCTOBER 25,1991

ALEX RHODES,P.C.
30100 TELEGRAPH RD.,STE. 460
BINGHAM FARMS,MI 48025
ATTN:ALEX RHODES

RE: SUMMARY OF RECENT LABORATORY RESULTS WITH RESPECT TO PATENTS #3,959,530 & 4,356,036.

A summary of our test results on coating materials obtained from inner surfaces of doors of recent model cars are tabulated on the attached sheet. This report is an interim report on this subject.

We note that further tests are in progress on coatings from other doors obtained in the field.

Absolute Analytical Laboratory,

David Byrd RS

David W. Byrd
Laboratory Director

aka
enclosures

ABSOLUTE ANALYTICAL LABORATORY
1030-D North Crooks Road
Clawson, Michigan 48017
313-435-5100

ALEX RHODES,P.C.
LAB I.D.# 91/01023/221

1.0 A N A L Y T I C A L S U M M A R Y *

1.1

PARAMETER	1989 ELDORADO FRONT RIGHT	METHOD
ZINC	:PRESENT	ATOMIC ABSORBTION SPECTROPHOTOMETRY
CHLORINATED SOLVENT	:PRESENT	SH/GAS CHROMOTOGRAPHY/HECD&PID

SH=STATIC HEADSPACE
HECD&PID ARE DETECTOR TYPES

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF MICHIGAN
SOUTHERN DIVISION

NICOLAS KALIARDOS,

Plaintiff,

v.

Civil Action
No. 88-CV-73729-DT

Hon. Paul V. Gadola

GENERAL MOTORS CORPORATION, BASF CORPORATION, DAUBERT INDUSTRIES, INC., H.B. FULLER COMPANY, NATIONAL STARCH & CHEMICAL CORPORATION, and BEAZER EAST, INC.,

Defendants.

AFFIDAVIT OF PATRICIA MAREK

PATRICIA MAREK, being duly sworn, deposes and says:

1. I am a Vice President of Daubert one of the defendants in Civil Action 88 CV 73729 DT.

2. I have a B.S. in Chemistry, a B.S. in Chemical Engineering, and a M.S. in Analytical Chemistry.

3. I have been employed at Daubert since 1969, and have held various positions in analytical chemistry, quality control and research and development. During that time I have become fully familiar with all of Daubert's controls and procedures for formulating and mixing its products, testing the raw materials, and controlling the composition and quality of the products. I am the person most familiar with Daubert's records and procedures by which it keeps data and information relative to its formulations and products.

FICES
KUSHMAN
CENTER
OND FLOOR
, MI 48075
-4400

EXHIBIT F

4. I am personally aware of all products which have been sold to General Motors.

5. Daubert has only sold three wax-type rust-control products to General Motors. They are identified as Nox-Rust X-151, Nox-Rust X-170 and Nox-Rust X-175.

6. Attachment 1 lists the ingredients of the Nox-Rust X-151 product. This product is a wax-type product that contains a small amount of an aluminum paste. Due to the addition of the aluminum paste, the product has a silver color.

7. Attachment 2 lists the ingredients of Nox-Rust X-170. This product is a clear wax-type product.

8. Attachment 3 lists the ingredients of Nox-Rust X-175. This product is a clear brush-on composition and sold as a service item. The ingredients of the X-175 product are essentially the same as the X-170 product, except that clay was added to make the product thicker for brush-on application.

9. X-151 was sold to General Motors during the period 1979 to 1986. It no longer is being made or sold. X-170 was sold to General Motors from June, 1984 to the present, although the sales have declined drastically and are now very small. X-175 was supplied to General Motors for only a short period of time and in small quantities.

10. The three Nox-Rust products X-151, X-170 and X-175 were developed totally independently by Daubert. We did not receive any formulas or samples from General Motors or any other supplier which related to or assisted us in the development of these products. Daubert started its business in 1935 making anti-

BK
LAW OFFICES
BROOKS & KUSHMAN
1000 TOWN CENTER
WENTY-SECOND FLOOR
SOUTHFIELD, MI 48075
(313) 358-4400

corrosion coatings, has developed extensive expertise in its fifty-plus years as a chemical company, and did not need any assistance in developing products to meet the specifications and needs of General Motors.

11. X-151 was prepared by Daubert over the period from 1975-78 to meet General Motors Specification 998-1128. Nox-Rust X-151 was approved by General Motors in 1978 and first sold to them in February 1979. The formula of X-151 remained basically the same from 1979 to 1986. This is substantiated by the batch sheets which show the ingredients of each and every batch of Nox-Rust X-151 which was made and sold by Daubert to GM. Copies of these records have been supplied in their entirety to Kaliardos' attorneys.

12. Nox-Rust X-170 was prepared by Daubert pursuant to General Motors Specification 998-2150. It was first sold to General Motors in 1984 and has remained basically the same ever since. This is substantiated by the batch sheets which show the ingredients of each and every batch of Nox-Rust X-170 which was made and sold by Daubert to GM. Copies of these records have been supplied in their entirety to Kaliardos' attorneys.

13. As to Nox-Rust X-175, only two small quantities were prepared in the lab and no large quantities or "batches" were ever made. Thus there are no batch sheets available for this product. The ingredients used to make the X-175 products are included in Attachment 3. These documents have also been provided to Kaliardos' attorneys.

BK
OFFICES
& KUSHMAN
WN CENTER
ECOND FLOOR
ELD, MI 48075
338-4400

14. Under my supervision, various quality contr procedures were followed which assured that each batch of X-15 X-170 and X-175 contained the specific components of the requisi formula and in the appropriate amounts. The batch operato specifically followed the formulations and mixing instructions indicated on the batch sheets. Quality control procedures we utilized during the preparation of each of the batches to ensu that the final products met the requisite standards and specific tions. The batch sheets recorded and depicted all of the ingred ents, mixing steps, quality control testing and other procedu utilized for each batch.

15. Other than X-151 which contains aluminum paste, other wax-type composition containing aluminum or zinc paste been sold to General Motors. X-170 is the only current wax-t coating being sold to General Motors by Daubert.

16. None of the three Nox-Rust products sold to Gene Motors, namely X-151, X-170 and X-175, contain the follo materials specified in the claims of U.S. Patent No. 3,959,5

a) perchlorethylene; or

b) petroleum distillate having a boiling p ranging between 350° and 380° F;

c) nonionic surfactant;

d) nonylphenoxypoly (ethyleneoxy) ethanol;

e) N, N, N', N' - tetrakis (2-hydroxypropyl) ethylenediamine.

17. Also, none of these three Nox-Rust products sol General Motors contain the following materials specified in

BK
LAW OFFICES
BROOKS & KUSHMAN
1000 TOWN CENTER
TWENTY-SECOND FLOOR
SOUTHFIELD, MI 48075
(313) 358-4400

claims of U.S. Patent No. 4,356,036:

a) chlorinated rubber;

b) chlorinated rubber having a combined chlorine content of at least 66%;

c) chlorinated solvent;

d) aromatic hydrocarbon solvent; and

e) mineral spirits

In addition, the X-170 and X-175 products do not contain an aluminum or zinc paste, and the X-151 product does not contain "neutral barium sulfonate" which are specified in the claims of the 4,356,036 patent.

18. Based on my experience and knowledge, Daubert has never manufactured at any time or sold to any customer any wax-type rust-control coating compositions containing any of the items specified in Paragraphs 16 and 17 above.

19. The X-151, X-170 and X-175 records which are identified above in Paragraphs 11-13 and which were provided to Kaliardos' counsel prove that none of the items specified in Paragraphs 16 and 17 were ever added to or included in the Daubert Nox-Rust products. These records and batch sheets detail every quantity and batch of Nox-Rust X-151, X-170 and X-175 products which were ever made or sold by Daubert to GM.

20. I supplied quantities of the Nox-Rust X-151 and X-170 products to our attorneys who in turn supplied them to Shrader Laboratories in Detroit, Michigan for analytical testings. It is my understanding that such analytical testing proved that neithe

BK
LAW OFFICES
BROOKS & KUSHMAN
1000 TOWN CENTER
TWENTY-SECOND FLOOR
SOUTHFIELD, MI 48075
(313) 358-4400

product contained any evidence of perchlorethylene or chlorinated rubber.

21. I have reviewed the October, 1989 report by Absolute Analytical Laboratories which contained the results of alleged analytical testing on a 1984 Buick Skyhawk door (Attachment 4). The coating product apparently found and tested on that door could not have been a product supplied by Daubert. Not only does that analysis show the presence of perchlorethylene and chlorinated rubber which were not present in any of Daubert's coatings, but it also indicates that no trace of aluminum was found. I understand that GM has identified that 1984 Skyhawk door as one being made at its assembly plant in Leeds, Missouri. I personally examined the records of Daubert and found that the only product supplied by Daubert to that Leeds plant through 1984 was the Nox-Rust X-151 product which contains aluminum and has a silver color.

Dated: November __, 1991

Patricia Marek
Patricia Marek

STATE OF ILLINOIS)
) SS.
COUNTY OF DuPage)

Subscribed and sworn to before me this 27 day of November, 1991.

" OFFICIAL SEAL "
GERALDINE M. SERAPONAS
NOTARY PUBLIC, STATE OF ILLINOIS
MY COMMISSION EXPIRES 11/7/94

Geraldine M. Seraponas
Notary Public
DuPage County, Illinois
My Commission Expires: 11/7/94

BK
LAW OFFICES
BROOKS & KUSHMAN
1000 TOWN CENTER
TWENTY-SECOND FLOOR
SOUTHFIELD, MI 48075
(313) 358-4400

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF MICHIGAN
SOUTHERN DIVISION

NICOLAS KALIARDOS,

Plaintiff,

vs.

GENERAL MOTORS CORPORATION, BASF CORPORATION, DAUBERT INDUSTRIES, INC., H.B. FULLER COMPANY, NATIONAL STARCH & CHEMICAL CORPORATION, and BEAZER EAST, INC., jointly and severally,

Defendants.

Civil Action
Case No. 88-CV-73729-DT

HON. Paul V. Gadola

/

AFFIDAVIT OF NICOLAS KALIARDOS

STATE OF MICHIGAN)
) SS
COUNTY OF OAKLAND)

I was born in Detroit Michigan on December 26, 1926. In 1934, when I was eight years old, my mother took me and my brother to live in Greece because she was unable to adjust to life in America. My father remained in America and sent money to Greece to support my mother, my brother and I. I remained in Greece until 1945. When I was 15 years old, I joined a group of Greek partisans and fought with them in the mountains of northern Greece.

After the war, I returned to the United States, served in the U.S. Army, got married, bought a cleaning business, raised a family and invented the coatings which are described in the two patents of this lawsuit.

I have never attended college. My knowledge of chemistry was acquired in Greek schools, from reading books, from product literature, from chemical company employees and from experience. My familiarity with the Greek language helped me because many chemical words are derived from Greek words.

My interest in coatings began when I purchased a 1968 Pontiac from Causley Pontiac, Detroit, Michigan. I noticed that the car had a white substance on the black vinyl top. After several unsuccessful attempts of the car dealer to remove the white substance, I began to experiment with chemicals that I had at my cleaning business for removing stains and waterproofing garments. I purchased other chemicals and obtained free samples from chemical companies.

After many experiments, I invented a product which removed the white stain and improved the finish of the vinyl top. I was very pleased that I was able to do something which a General Motors dealer could not do. I thought that General Motors would be interested in my product. Through a mutual friend, I was introduced to a DuPont sales representative, Mr. Charles King. General Motors was one of Mr. King's accounts for paints and coatings.

I named my product Sinowax 6 in 1. Mr. King took samples of Sinowax 6 in 1 to the Fisher Body Division of General Motors in 1971. Mr. King told me that Fisher Body would buy Sinowax 6 in 1 if it would protect bare steel against corrosion. Fisher Body supplied Mr. King with bare steel test

panels which I coated and Fisher Body tested for corrosion.

In the beginning Fisher Body wanted a coating which would withstand 24 hours of salt spray. Later they wanted more resistance to salt spray and added other requirements. Fisher Body needed a coating which would protect the bottom of vehicle doors against corrosion. From 1971 through 1981 I continued to experiment and to supply different formulations to Fisher Body. I worked 7 days a week and long hours each day on the Fisher Body anti-corrosion requirements. This work involved thousands of hours of my time. During my experiments, I changed the ingredients in the formulas and the amounts of the ingredients. I constructed a salt spray fixture and ran corrosion tests.

From about 1972 to 1981 I continuously brought samples to the Fisher Body Corrosion Laboratory. I was never compensated for the samples nor were any unused samples returned to me. During some months I delivered several samples to the Fisher Body Lab. I also visited the Lab frequently and discussed the results of the tests with the Corrosion Lab engineers. The engineers always commented favorably on the test results but refused to allow me to see or have copies of the reports. Tests of my coating at outside laboratories also proved that the coating met the General Motors' corrosion requirements.

On May 25, 1976 I was granted U.S. Patent No. 3,959,530 ('530 Patent). The patent covers an anti-corrosion coating

containing wax, a chlorinated solvent, mineral spirits, a surfactant and a chelating agent.

Wax is used because it is waterproof and remains pliable in cold and hot weather. I first used wax because it was available at my cleaning plant for waterproofing garments. I noticed that when I waterproofed garments, the wax coated the metal buttons of the garments and improved their appearance.

The chlorinated solvent prevents the coating from separating and sagging. I discovered this when I was experimenting with the bare metal test panels which General Motors gave me to coat. I noticed that the panels were covered with a thin film of oil. I discovered that when I added perchloroethylene to my test samples, the perchlorethylene helped the wax to adhere to the surface. I also discovered that the perchlorethylene evaporated very quickly. This prevented the coating from sagging. I found out that perchloroethylene was a very important ingredient for meeting the General Motors corrosion requirements.

The corrosion of General Motors' doors during the 1970's was a unique corrosion problem. The doors were constructed of an outer steel panel joined to a steel inner panel. The General Motors engineers called the joint which extended around a door a hem flange. The hem flange consisted of a turned up flange on the outer panel which extended around the inner panel. At the bottom of the door there was a gap where the outer panel and inner panel were joined together by the hem flange. The gap

extended across the entire bottom of the door. At the bottom of door there were small drain holes. However, the drain holes were above the hem flange and gap.

Because it was not possible to locate the drain holes above the gap, it was not possible to remove all of the oil from the bare inner surfaces at the bottom of the door. Some of the oil collected in the gap and remained on the bare steel surfaces. Another condition which caused the corrosion problem was that a very thin coating was required because it had to be sprayed inside of the doors. Also, the coating needed to spread over the entire surface of the metal. Thin coatings tended to sag. Thick coatings were difficult to apply and had unacceptable drying times.

Chlorinated solvents (e.g. perchloroethylene) are very powerful solvents for dissolving oil. They also evaporate very quickly. There are no other solvents which I am aware of which are more effective in penetrating oil and evaporate more quickly than the chlorinated solvents. I discovered that when a chlorinated solvent was added to the coating, it made a major improvement. It quickly penetrated the oil on the bare steel at the bottom of the doors and evaporated quickly. This caused the coating to immediately contact the surface of the bare metal and to set up without sagging. Adherence of the coating was significantly improved.

The surfactant (Igepal) is used in the coating because it improves its spreadibility. It is important to cover all of

the bare metal. Also, the improved spreadability helps a worker to properly apply the coating because it is difficult to see the entire inside surface of a door when the coating is sprayed into the door.

The chelating agent (Quadrol) further improves the adherence of the coating to the bare metal. I discovered this when I was developing the coating. I also found that it is effective for preventing materials, and in particular aluminum and zinc, from settling in the coating before it is applied to the doors.

The mineral spirits act as a carrier for the other materials. They are much lower in cost than the perchloroethylene. They are used to dissolve the wax when the the wax is heated. The method of preparing the coating is disclosed in my patent.

From 1974 through 1979 I experimented with a welded zinc coating which I was informed General Motors needed. A number of samples were prepared and tested at the Fisher Body Corrosion Lab. This work did not result in a commercially successful coating. However, some of the results were incorporated into the '036 Patent.

The '036 Patent covers an anti-corrosion coating containing a wax, an aluminum or zinc paste, a chlorinated solvent, barium sulfonate, an aromatic hydrocarbon resin, chlorinated rubber, an aromatic hydrocarbon solvent and mineral spirits.

In late 1978, Mr. Latsko, Director of the Fisher Body Corrosion Lab, called me on the telephone and requested a sample of my wax coating for a test. Mr. Latsko told me the testing was to establish that my coating was suitable for the inside of vehicle doors. He also told me that he knew that my product should be able to meet their requirements. In February, 1979, Daniel Hogan, a Fisher Body test engineer, told me that my coating was the only coating that passed all the corrosion tests. Afterwards, I continued to experiment and improve the coating. In May of 1980, I had a heart attack and was hospitalized. In August, 1980, I returned to work and delivered two gallons of my coating for a final test to John Bubak, a Fisher Body purchasing agent. In October, 1980, Mr. Bubak informed me that my coating didn't pass their tests. Mr. Bubak also informed me that I would not have received a purchasing order even if the coating had passed because I was not a coating manufacturer.

The coating which is described and claimed in the '036 Patent was developed to meet corrosion requirements, given to me by Fisher Body Corrosion engineers.

The aluminum paste was added to the coating in late 1978 to meet the requirement of General Motors Material Specification 998-1128 of a coating containing aluminum. The barium sulfonate keeps the coating soft and improves corrosion protection. The wax and chlorinated solvent are used for the reasons previously given. The chlorinated rubber has a high resistance to acids

and alkalies. It is needed to pass the General Motors car detergent solution test in which a coated test sample is immersed in a strong alkaline solution. The chlorinated rubber also improves the resistance to salt spray. The aromatic hydrocarbon solvent is used to dissolve the resin and is present in the aluminum paste; the mineral spirits acts as a carrier.

The many tests which I have conducted convince me that all of these ingredients are needed in a coating applied to bare steel surfaces, if the coating is to meet General Motor's corrosion tests.

Nicolas Kaliardos

Subscribed and sworn to before me
this 19th day of December, 1991

CARMELINA MULLANE
Notary Public, Oakland County, MI
My Commission Expires Sept. 17, 1993

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF MICHIGAN
SOUTHERN DIVISION

NICOLAS KALIARDOS,

Plaintiff,

vs.

GENERAL MOTORS CORPORATION, BASF CORPORATION, DAUBERT INDUSTRIES, INC., H.B. FULLER COMPANY, NATIONAL STARCH & CHEMICAL CORPORATION, and BEAZER EAST, INC., jointly and severally,

Defendants.
_____/

Civil Action
Case No. 88-CV-73729-DT

Hon. Paul V. Gadola

AFFIDAVIT OF DAVID W. BYRD

STATE OF MICHIGAN)
) SS:
COUNTY OF OAKLAND)

I am the Laboratory Director of the Absolute Analytical Laboratory, Inc. at 1030-D North Crooks Road, Clawson, Michigan. The Absolute Analytical Laboratory is a chemical laboratory which specializes in the analyses of inorganic and organic materials. I have Bachelors and Masters degrees in the Biological Sciences and a Masters Degree in Chemical Engineering. My education and experience are summarized in a Resume which is attached and marked Exhibit "A".

Samples of wax anti-corrosion coatings were taken from the interiors of 1984 Buick Skyhawk and 1989 Cadillac Eldorado doors and analyzed at the Absolute Analytical Laboratory. I am intimately familiar with the procedures and results of the

analyses because I have personally conducted the analyses.

The results of the analyses are attached and marked "Attachment B" (1984 Skyhawk) and "Attachment C" (1989 Eldorado). A sample of the 1989 Eldorado coating was forwarded to Charles Evans and Associates, Redwood City, California for further analysis. Charles Evans and Associates is a well known analytical laboratory which specializes in materials characterization. A summary of the Charles Evans lab analysis is attached and marked "Exhibit "D".

I am familar with U.S. Patent No. 3,959,530 and U.S. Patent No. 4,356,036, having reviewed the patents, including their claims. I have also reviewed Daubert Industries, Inc. documents relating to the compositions of Daubert wax-type anti-corrosion coatings Nox Rust X-151 and Nox Rust X-170. The documents disclose that Nox Rust X-151 corresponds to General Motors material specification 998-1228 and that Nox Rust X-170 corresponds to General Motors material specification 998-2150.

Claim 1 of U.S. Patent No. 3,959,530 defines a wax coating containing a wax residue such as paraffin and microcrystalline wax; perchloroethylene; a petroleum distillate having a boiling point ranging between 350^{o} and 380^{o}F, a nonionic surfactant such as nonylphenoxypoly(ethyleneoxy)ethanol and a small amount of [N,N,N',N'-tetrakis(2-hydroxypropyl) - ethylenediamine].

After reviewing the results of the laboratory analysis of the 1984 Skyhawk coating and the Daubert documents, I am of

the opinion that each of the ingredients of claim 1 of U.S. Patent No. 4,356,036 is present in Daubert Nox Rust X-151. This opinion is based on the following. Daubert has admitted in its documents that Nox Rust X-151 contains microcrystalline wax; an aromatic hydrocarbon resin having a softening point, R and B, of 70° C. - 140° C"; barium sulfonate; an aromatic hydrocarbon solvent; a hydrocarbon solvent, and mineral spirits. My analysis of the 1984 Buick Skyhawk coating disclosed the presence of zinc; and chlorinated rubber having a combined chlorine content of at least 66% (i.e. Parlon).

After reviewing the results of the laboratory analyses of the 1989 Cadillac Eldorado coating at my laboratory and at the Charles Evans laboratory and the Daubert documents, I am of the opinion that each of the ingredients or their equivalents of U.S. Patent No. 3,959,530 is present in Daubert Nox Rust X-170. This opinion is based on the following. Daubert has admitted in its documents that Nox Rust X-170 contains wax and a petroleum distillate having a boiling point ranging between 350° and 380°F. My analysis of the Eldorado coating disclosed the presence of a surfactant in the 1989 Eldorado coating, i.e. a dispersent equivalent in action and function to a surfactant such as nonylphenoxypoly(ethyleneoxy)ethanol. My analysis of the Eldorado coating also disclosed the presence of a methlyene chloride, a chlorinate solvent equivalent in action and function to perchloroethylene. The Charles Evans analysis disclosed the presence of a chelating agent, i.e. a material equivalent in

action and function to [N,N,N',N' -tetrakis(2-hydroxypropyl) ethylenediamine].

L/S *
David W. Byrd

Subscribed and sworn to before me
this 20th day of December, 1991

*Signed original filed with Court December 20, 1991 in Plaintiff's Response to Motion of Daubert Industries, Inc. for Summary Judgment of Non-Infringement

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF MICHIGAN
SOUTHERN DIVISION

NICOLAS KALIARDOS,

Plaintiff,

vs.

GENERAL MOTORS CORPORATION, BASF CORPORATION, DAUBERT INDUSTRIES, INC., H.B. FULLER COMPANY, NATIONAL STARCH & CHEMICAL CORPORATION, and BEAZER EAST, INC., jointly and severally,

Defendants.
_____/

Civil Action
Case No. 88-CV-73729-DT

Hon. Paul V. Gadola

AFFIDAVIT OF DR. PAUL S. EPSTEIN

STATE OF MICHIGAN)
) SS:
COUNTY OF WASHTENAW)

I have a Doctor of Philosophy Degree. My education and experience are summarized in the resume attached hereto. During 1990 I was the Director of the Laboratory Services Canadian Operations, Clayton Environmental Consultants, Inc., Windsor, Ontario, Canada.

In March, 1990, Daryl P. Strandbergh, Manager of Organic Laboratory Services, Clayton Environmental Consultants, Inc., Novi, Michigan, requested our laboratory to analyse a sample of a wax coating designated as 998-1128 for perchloroethylene. Perchloroethylene is a widely used solvent which evaporates very quickly when exposed to air. Consequently, we were not able to quantify the amount of

perchloroethylene in the original coating.

The test was conducted by Dr. James Johnson, our most highly qualified chemist. I am intimately familar with the method of testing and have personally reviewed the test records and results. The sample was first analyzed by gas chromotography using a heated head space and an electron capture detector. This test identified perchloroethylene in the sample. The sample was then analyzed using GC/MS with selected ion monitoring (SIM). This is a very sophisticated and specific test for identifying chemical compounds. The GC/MS-SIM test analysis positively confirmed the presence of perchloroethylene in the sample.

The amount of perchloroethylene in the sample could not have resulted from airborne contamination of perchloroethylene in clothing, water or other materials.

Paul S. Epstein Ph.D.

Dr. Paul S. Epstein

Subscribed and sworn to before me
this 27th ~~day of~~ December, 1991

Alex T Rhodes

ALEX RHODES
Notary Public, Oakland County, MI
My Commission Expires April 26, 1992

Acting in Washtenaw County

ABSOLUTE ANALYTICAL LABORATORY
1030-D North Crooks Road
Clawson, Michigan 48017
313-435-5100

DECEMBER 30,1991

ALEX RHODES,P.C.
30100 TELEGRAPH RD.,STE. 460
BINGHAM FARMS,MI 48025
ATTN:ALEX RHODES

RE:ELECTRON SPECTROSCOPY FOR CHEMICAL ANALYSIS (ESCA) LABORATORY RESULTS WITH RESPECT TO PATENTS #3,959,530 & 4,356,036. 1989 ELDORADO FRONT PASSENGER DOOR.

Coating materials obtained from the bottom inner surfaces of a 1989 Eldorado door were sent to Charles Evans and Associates (Redwood, Ca) to determine the presence of zinc, organohalides, and chelating agents. The following is a summary and discussion of the test results from the ESCA analysis. The ESCA results indicate that zinc, chlorinated organic, sulfur oxide(s), and chealating functional groups were found to be present in the referenced coating.

Zinc was detected using ESCA at approximately 3.5 %. The Eldorado coating was found to contain zinc in our laboratory using Atomic Absorption Spectrophotometry (reports 91.01023.221 and 91.01023.228).

The presence of ligands which are the functional groups of chelating agents were found. Several ligands were detected including carbonyl, carboxylate, amines and hydroxyl functional groups (see exhibit 106a). All of the functional groups detected are capable of forming a complex or coordination compound by sharing electron density with with metal ions.

The test data also indicates the presence of organochlorine compounds. With respect to the patents, the presence of chlorinated solvents and chlorinated polymers would be indicated by the presence of organochlorine compounds. This is consistent with the chlorinated solvent methylene chloride which was found in the Eldorado coating (report 91.01023.228). The presence of other organochlorine compounds such as chlorinated rubbers is indicated by the elevated levels of organochlorine compounds (~ 0.3 %) relative to the trace levels of methylene chloride (< 0.00001 %).

ABSOLUTE ANALYTICAL LABORATORY
1030-D North Crooks Road
Clawson, Michigan 48017
313-435-5100

ALEX RHODES,P.C.
LAB I.D.# 91/01023/229

ESCA analysis also detected the presence of sulfur oxides. ulfur oxides would be consistent with the presence of sulfonate ompounds.

A tabular summary of data taken together from ESCA analysis erformed by Charles Evans and Associates and our laboratory are ummarized on page three of this report. We note that much of the data btained here is not consistent with the MSDS which we have available or these products.

Absolute Analytical Laboratory,

David W. Burd
Laboratory Director

aka
enclosures

ABSOLUTE ANALYTICAL LABORATORY
1030-D North Crooks Road
Clawson, Michigan 48017
313-435-5100

ALEX RHODES, P.C.
LAB I.D.# 91/01023/229

TABLE OF ANALYTICAL RESULTS
1989 ELDORADO RIGHT PASSENGER DOOR

PARAMETER	METHOD
ZINC	Flame Atomic Absorption Spectrophotmetry
CHLORINATED SOLVENT (METHYLENE CHLORIDE)	Electron Spectroscopy for Chemical Analysis Static Headspace Gas Chromatography Photoionization and Electrolytic Conductivity Detector
'RFACTANTS	Electron Spectroscopy for Chemical Analysis Methylene Blue Active Substances
LIGAND FUNCTIONALITIES (CHELATING FUNCTIONS)	Electron Spectroscopy for Chemical Analysis
SULFUR OXIDIZED FORM	Electron Spectroscopy for Chemical Analysis

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF MICHIGAN
SOUTHERN DIVISION

NICOLAS KALIARDOS,

Plaintiff,

vs.

GENERAL MOTORS CORPORATION, BASF CORPORATION, DAUBERT INDUSTRIES, INC., H.B. FULLER COMPANY, NATIONAL STARCH & CHEMICAL CORPORATION, and BEAZER EAST, INC., jointly and severally,

Defendants.
_____/

Civil Action
Case No. 88-CV-73729-DT

HON. Paul V. Gadola

AFFIDAVIT OF DARYL P. STRANDBERGH

STATE OF MICHIGAN)
) SS
COUNTY OF OAKLAND)

I am the Manager of Organic Laboratory Services, Clayton Environmental Consultants, Inc., Novi, Michigan. Clayton Environmental Consultants, Inc. provides analytical chemistry services relating to industrial hygiene and the environment. I have Bachelor in Chemistry and MBA Degrees from the University of Michigan, Dearborn.

In January, 1990, the Clayton Novi laboratory analysed a sample of General Motors 998-1128 coating and a sample from a 1984 Oldsmobile Cierra. Testing at the Novi laboratory did not reveal the presence of tetrachloroethene (also known as tetrachloroethylene).

The remainder of the 998-1128 sample was sent to our Windsor, Canada laboratory for further analysis (Note: there was insufficient Sample Cierra for re-analysis). Testing at the Windsor laboratory was conducted by Dr. Paul S. Epstein and Dr. James Johnson. Analysis of Sample 998-1128 was performed at the Windsor laboratory by GC/MS using selected ion monitoring (SIM). The GC/MS-SIM employed parameters specific for tetrachloroethene. This procedure provided greater sensitivity for tetrachloroethene. The presence of tetrachloroethene in the 998-1128 sample was positively confirmed at the Windsor laboratory using GC/MS and the static headspace technique. I do not disagree with the results of the Windsor laboratory.

The analysis of mixtures may require the application of alternate test methods to determine whether an ingredient is present in a mixture. It is not uncommon for a test method to be inadequate for detecting a specific ingredient because of limitations of the test method.

A copy of the Clayton Environmental laboratory final report is attached.

Daryl P. Strandbergh

Subscribed and sworn to before me
this 27th day of December, 1991

ALEX RHODES
Notary Public, Oakland County, MI
My Commission Expires April 25, 1992

001186

Clayton Environmental Consultants, Inc.

22345 Roethel Drive • Novi, Michigan 48050 • (313) 344-1770

April 5, 1990

Mr. Alex Rhodes, Esq.
24700 Northwestern Highway
Suite 412
Southfield, MI 48075

Clayton Project No. 62922-17

Dear Mr. Rhodes:

The following is our report for Samples 998-1128 and Cierra (VIN 1C3AJ19E2DD406799) Wax Scraping, received on January 2, 1990, for qualitative analysis. The purpose of this analysis was to determine the presence of tetrachloroethene and volatile aromatic hydrocarbons in both samples.

The analysis was performed by gas chromatography/mass spectrometry (GC/MS) using dynamic headspace analysis and general scanning techniques. A portion of sample was weighed and placed in a glass vessel. The vessel was sealed and heated to 90 °C. Helium was passed through the glass vessel at 60 cubic centimeters/minute for 14 minutes. The effluent was collected by cryogenic focusing using liquid nitrogen (-150 °C) to trap the purgeable compounds. After purging, the cryogenic trap was rapidly heated with a helium flow to transfer the collected organics into a GC/MS for analysis. Using the dynamic headspace technique, aromatic compounds were detected in both samples. Tetrachloroethene was not detected. The results are provided in the attached table.

Based on our discussions of the data generated from the GC/MS analysis of Samples 998-1128 and Cierra, Sample 998-1128 was sent to our Windsor laboratory for static headspace analysis of tetrachloroethene by gas chromatography using an electron capture detector (GC/ECD). The GC/ECD analysis was performed to improve analytical sensitivity for tetrachloroethene. Insufficient sample remained to reanalyze Sample Cierra. A 0.80-gram portion of Sample 998-1128 was placed in 40-cc bottle and sealed with a Teflon liner. The bottle was heated to 80 °C for 30 minutes and a portion of the headspace was injected onto the GC/ECD for analysis. Tetrachloroethene was detected based on the static headspace GC/ECD analysis. The results are provided in the attached table.

Confirmation of tetrachloroethene in Sample 998-1128 was performed by GC/MS using selected ion monitoring (SIM). The GC/MS-SIM technique employed parameters specific for tetrachloroethene, which provided greater sensitivity for tetrachloroethene. Tetrachloroethene was positively confirmed using GC/MS and the static headspace technique.

We appreciate the opportunity to be of assistance to you. If you have any questions, please call me at (313) 344-2650.

Sincerely,

Daryl P. Strandbergh
Director, Organic Laboratory Services

DPS/dp
Attachment

001187

Analytical Results
for
Mr. Alex Rhodes, Esq.

Clayton Project No. 62922-17

Dynamic Headspace		Static Headspace*	
GC/MS Sample 998-1128	GC/MS Sample Clems	GC/ECD Sample 998-1128	GC/MS (SI Sample 998-1128
Ethyl benzene	Sulfur dioxide	Tetrachloroethene	Tetrachloroeth
Toluene	Acetaldehyde		
Xylenes	Heptanal		
Methyl cyclohexane	Benzaldehyde		
Dimethyl cyclohexanes	Trimethyl benzene		
Decane	Octanal		
Undecane	1-Phenyl ethanone		
Additional unknown hydrocarbons	Nonanal		
	Dodecane		
	Decanal		

*Analyses specific for tetrachloroethene only.

001188

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF MICHIGAN
SOUTHERN DIVISION

NICOLAS KALIARDOS,

Plaintiff,

vs.

GENERAL MOTORS CORPORATION, BASF CORPORATION, DAUBERT INDUSTRIES, INC., H.B. FULLER COMPANY, NATIONAL STARCH & CHEMICAL CORPORATION, and BEAZER EAST, INC., jointly and severally,

Defendants.
_____/

Civil Action
Case No. 88-CV-73729-DT

Hon. Paul V. Gadola

AFFIDAVIT OF DAVID W. BYRD

STATE OF MICHIGAN)
) SS:
COUNTY OF OAKLAND)

David W. Byrd, being duly sworn, deposes and says:

1. That I have an M.S. degree in Biological Science, Wayne State University, post graduate credits in chemistry, and am a member in good standing of The American Chemical Society, ANACHEM and the Chromatography Society.

2. That I am the owner of Absolute Analytical Laboratory, 1030-D Crooks Road, Clawson, Michigan, which is in the business of trace organic and inorganic chemical analyses of materials.

3. That from December, 1987 to the present, I conducted laboratory analyses at the Absolute Analytical

Laboratory of samples of a BASF anti-corrosion coating and scrapings of this coating taken from General Motors' vehicles.

4. That I reviewed BASF and General Motors documents, technical literature and deposition testimonies of BASF and General Motors employees relating to the BASF S51Z001 coating.

5. That I also reviewed U.S. Patents Nos. 3,959,530 and 4,356,036, including the specifications and claims.

6. That after reviewing the above information, it is my opinion that the BASF anti-corrosion coating contains all of the ingredients or well known equivalents of the ingredients specified in claim 1 of U.S. Patent No. 3,959,530 and claim 1 of U.S. Patent No. 4,356,036.

Further deponent sayeth not.

David W. Byrd

Subscribed and sworn to before me
this 2nd day of January, 1992

Notary Public, Oakland County, MI
My Commission Expires May 17, 1993

000120

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF MICHIGAN
SOUTHERN DIVISION

NICOLAS KALIARDOS,

Plaintiff,

vs.

GENERAL MOTORS CORPORATION, BASF CORPORATION, DAUBERT INDUSTRIES, INC., H.B. FULLER COMPANY, NATIONAL STARCH & CHEMICAL CORPORATION, and BEAZER EAST, INC., jointly and severally,

Defendants.
_____/

Civil Action
Case No. 88-CV-73729-DT

Hon. Paul V. Gadola

AFFIDAVIT OF DAVID W. BYRD

STATE OF MICHIGAN)
) SS:
COUNTY OF OAKLAND)

I am the Laboratory Director of the Absolute Analytical Laboratory, Inc. at 1030-D North Crooks Road, Clawson, Michigan. The Absolute Analytical Laboratory is a chemical laboratory which specializes in the analyses of inorganic and organic materials. I have Bachelor and Master degrees in the Biological Sciences. My education and experience are summarized in a Resume which is attached and marked Byrd Exhibit "A".

A sample of General Motors 998-2150 wax type anti-corrosion coating was taken from a 1989 Cadillac Eldorado at the Absolute Analytical Laboratory and analyzed to identify whether certain ingredients were in the coating. A portion of

the door with the coating in place was removed at our laboratory and sent to Charles Evans and Associates, Inc. laboratory in Redwood City, California, which specializes in material characterization.

Our analysis detected the presence of wax, zinc, methylene chloride, and chlorinated organic compounds. Zinc was detected using Flame Atomic Absorption Spectrophotrometry; methylene chloride was detected using Static Headspace Gas Chromatography with an Electrolytic Conductivity Detector; surfactants were detected using Methylene Blue Active Substances. A summary of our test results is attached and marked Byrd Exhibit "B".

The sample which was forwarded to Charles Evans and Associates was analyzed using the method of Electron Spectroscopy for Chemical Analysis (ESCA). The Charles Evans laboratory detected zinc, ligands (including carbonyl, carboxalate, amines and hydroxyl functional groups), and organochloride compounds. These results are consistent with the presence of a chelating agent, chlorinated compounds and zinc in the sample.

I have reviewed H.B. Fuller Material Safety Data Sheets, a production batch card, a Code Sheet, and supplier information of the ingredients for their wax-type anti-corrosion coating WC-2291 which corresponds to General Motors anti-corrosion coating 998-2150. The H.B. Fuller documents do not disclose all of the ingredients of the coating.

I have also reviewed U.S. Patent Nos. 3,959,530 and U.S. 4,356,036, including the claims. Claim 1 of U.S. Patent No. 3,959,530 defines a wax coating comprising a wax residue such as paraffin and microcrystalline wax; perchloroethylene; a petroleum distillate having a boiling point ranging between 350° and 380°F, a nonionic surfactant such as nonylphenoxypoly (ethyleneoxy)ethanol and a small amount of [N,N,N',N'-tetrakis(2-hydroxypropyl) -ethylenediamine].

Claim 1 of U.S. Patent No. 4,356,036 defines a wax coating comprising a mixture of aluminum paste or zinc paste containing aluminum or zinc flakes and a solvent, microcrystalline wax, aromatic hydrocarbon resin having a softening point, R and B, of 70° C. - 140° C., chlorinated rubber having a combined chlorine content of at least 66%, neutral barium sulfonate, a chlorinated solvent, an aromatic hydrocarbon solvent and mineral spirits.

After reviewing the results of the laboratory analyses of the 1989 Cadillac Eldorado coating at my laboratory and at the Charles Evans laboratory and the H.B. Fuller documents, I am of the opinion that each of the ingredients or their equivalents of U.S. Patent No. 3,959,530 is present in H.B. Fuller anti-corrosion coating WC-2291. H.B. Fuller has admitted in its documents that its coating contains wax and a petroleum distillate having a boiling point ranging between 350° and 380°F.

My analysis of the Eldorado coating disclosed the

presence of a surfactant in the 1989 Eldorado coating, i.e. a dispersent equivalent in action and function to a surfactant such as nonylphenoxypoly(ethyleneoxy)ethanol; methlyene chloride, and a chlorinated solvent equivalent in action and function to perchloroethylene. The Charles Evans analysis disclosed the presence of chelating agents, i.e. substances equivalent in action and function to [N,N,N',N' -tetrakis (2-hydroxypropyl)ethylenediamine].

Although many of the ingredients of claim 1 of U.S. Patent No. 4,356,036 were identified, sufficient information is not available to form an opinion of whether H.B. Fuller WC-2291 infringes claim 1 of U.S. Patent No. 4,356,036.

David W. Byrd

Subscribed and sworn to before me
this 2nd day of January, 1992

CAROLINA MEILANE
Notary Public, Oakland County, MI
My Commission Expires Jan. 17, 1996

ABSOLUTE ANALYTICAL LABORATORY
1030-D North Crooks Road
Clawson, Michigan 48017
313-435-5100

JULY 14,1992

ALEX RHODES,P.C.
30100 TELEGRAPH RD.,STE. 460
BINGHAM FARMS,MI 48025

RE:

SAMPLE DESCRIPTION	:H.B. FULLER FORMULATION WC-2291 & WC-2291-P
ANALYSIS REQUESTED	:AROMATIC AND CHLORINATED CMPDS. HHS/GC-PID-ELCD
PURCHASE ORDER	:VERBAL
LABORATORY #	:92.01023.266

Samples of the referenced H.B.Fuller products were analysed for the presence of aromatic hydrocarbons and volatile chlorinated solvents. Our test results are tabulated on the attached pages.

If you have questions or are in need of additional service please feel free to contact us at your earliest convenience.

Absolute Analytical Laboratory,

David W. Byrd
Laboratory Director

AR1/92

ABSOLUTE ANALYTICAL LABORATORY
1030-D North Crooks Road
Clawson, Michigan 48017
313-435-5100

CLIENT :ALEX RHODES,P.C.
SAMPLE DESCRIPTION :H.B. FULLER FORMULATION WC-2291 & WC-2291-P
ANALYSIS REQUESTED :AROMATIC AND CHLORINATED CMPDS. HHS/GC-PID-ELCD
LABORATORY # :92.01023.266

ANALYTICAL SECTION

1.0 SAMPLE PREPARATION
1.1 SAMPLE DESCRIPTION TABLE

SAMPLE DESCRIPTION

1 QUART CONTAINER MARKED "WC-2291"

1 QUART CONTAINER MARKED "WC-2291-P"

1.1.2 The wax coating samples (ca. 1 gram) were placed into 40 ml vials with a silicone-teflon septa for head space sampling. The containerized samples were incubated at 90 C for approximately one hour. Desorbed volatiles were obtained by puncturing the container and obtaining a sample of the headspace volume which was subsequently injected into the gas chromatograph. The operational conditions of the gas chromatograph were:

T(inject) : COC C T(column) : program T(detect): 200 C
T(initial): 40 C T(rate) : 5 C T(final) : 150 C
T(hold) : 5 MIN Flow mlsec-@C:8.0
Detector 1: PID Detector 2: HECD
Column: 530 um x 30 m. 3.0 um DB624.
The resulting chromatograms were compared to standards of aromatic hydrocarbons and chlorinated hydrocarbons for identification purposes.

2.0 TEST RESULTS
2.1 TABULATED DATA FOR AROMATIC HYDROCARBONS

SAMPLE DESCRIPTION	AROMATIC COMPOUNDS	COMMENTS
WC-2291	DETECTED	Benzene, toluene, ethylbenzene, xylenes
WC-2291-P	DETECTED	Benzene, toluene, ethylbenzene, xylenes

ABSOLUTE ANALYTICAL LABORATORY
1030-D North Crooks Road
Clawson, Michigan 48017
313-435-5100

CLIENT :ALEX RHODES,P.C.
SAMPLE DESCRIPTION :H.B. FULLER FORMULATION WC-2291 & WC-2291-P
ANALYSIS REQUESTED :AROMATIC AND CHLORINATED CMPDS. HHS/GC-PID-ELCD
LABORATORY # :92.01023.266

2.2 TABULATED DATA FOR CHLORINATED HYDROCARBONS

SAMPLE DESCRIPTION	CHLORINATED COMPOUNDS	COMMENTS
WC-2291	DETECTED	1,1-dichloroethene
WC-2291-P	DETECTED	1,1-dichloroethene

3.0 DISCUSSION
3.1 Our tests show that aromatic hydrocarbons such as benzene, toluene, ethylbenzene and xylenes are found in both the Fuller formulation designated "WC-2291" and "WC-2291-P". Additionally, our test show that 1,1-dichloroethene, a volatile chlorinated hydrocarbon, are present in the reference wax coating materials.

ABSOLUTE ANALYTICAL LABORATORY
1030-D North Crooks Road
Clawson, Michigan 48017
313-435-5100

March 06,1992

ALEX RHODES,P.C.;
30100 TELEGRAPH RD.,STE. 460
BINGHAM FARMS,MI 48025
ATTN:ALEX RHODES

RE:
PROJECT :KALIARDOS v. GENERAL MOTORS et al.
ANALYSIS REQUESTED :COMMENTS ON MOTION
PURCHASE ORDER :VERBAL
LABORATORY # :92.01023.241

The following is a responce to the Motion to Strike Affidavit of David W. Byrd.

1.0 THE CHARLES EVANS SCOPE OF WORK

1.1 The motion which you have provided covers numerous references to test parameters which were not included in the scope of work which had been requested of Charles Evans and Associates. The specific items which were requested were the presence of ligands or chealating compounds. This is sufficiently clear from my communication to Dr. Edgell dated December 9,1991 which is in your possession. Because of the limitations of the test method we did not request that ESCA be used to:

1. Determine the presence of methylene chloride.
2. Determine the presence of surfactants.
3. Identify a specific chealating agent.
4. Determine specific molecular forms of organochlorine compounds detected.

The nature of the defendants queries directed during Dr. Edgell's depostion reflect a lack of understanding of the use of the ESCA test method.

1.2 After completion of the testing Dr. Edgell sent a fax of the ESCA laboratory results. I called Dr. Edgell and discussed the results. At that time I confirmed that ligands were detected. The data on the carbon bonding clearly denotes the presence ligands namely carbonyl, carboxylate amd amines. Further the test showed that organochlorine compounds, sulfur oxides and zinc were detected. This data was used to augment other laboratory data obtained in our laboratory (refer to report 91.01023.229). ESCA was used as exclusive evidence for the presence of a chealating agent.

ABSOLUTE ANALYTICAL LABORATORY
1030-D North Crooks Road
Clawson, Michigan 48017
313-435-5100

CLIENT :ALEX RHODES,P.C.
SAMPLE DESCRIPTION :KALIARDOS v. GENERAL MOTORS et al.
ANALYSIS REQUESTED :COMMENTS ON MOTION
LABORATORY # :92.01023.241

1.3 The fact that zinc is in the oxidized form would be consistent with the common usage of zinc as a sacrificial metal which would be oxidized (rusted) instead of the metal of the door. In this perspective it is consistent with the intended application of zinc as a constituent of an anticorrosion product. The fact that ESCA only provides surface information is again consistent and predicted with the form of zinc found on the surface of the coating.

2.0 THE PRESENCE OF LIGANDS
2.1 Formualtions which use metallosulfonates, i.e. calcium sulfonate, barium sulfonate, etc., constitute metal complexes which make use of ligands to complex the metal. Calcium sulfonate is listed as an ingredient in H.B. Fuller's product WC-2291.

3.0 THE PRESENCE OF SURFACTANTS
3.1 Tests performed in our laboratory (91.01023.229) show that surfactants are present in the anticorrosion sample obtained from the door of a 1989 Eldorado.
3.1 Calcium sulfonate is classified as surfactant. Calcium sulfonate is listed as an ingredient in H.B. Fuller's product WC-2291. See summary report on BASF ANTI-CORROSION WAX COATING S51Z001 (report 90.01023.xxx).

If you have questions or are in need of additional service please feel free to contact us at your earliest convenience.

Absolute Analytical Laboratory,

David W. Byrd
Laboratory Director

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF MICHIGAN
SOUTHERN DIVISION

NICOLAS KALIARDOS,

Plaintiff,

vs.

GENERAL MOTORS CORPORATION, BASF CORPORATION, DAUBERT INDUSTRIES, INC., H.B. FULLER COMPANY, NATIONAL STARCH & CHEMICAL CORPORATION, and BEAZER EAST, INC., jointly and severally,

Defendants.

Civil Action
Case No. 88-CV-73729-DT

HON. PAUL V. GADOLA

AFFIDAVIT OF JAMES P. JOHNSON, PH.D.

COMMONWEALTH OF CANADA)
) SS:
PROVINCE OF ONTARIO)

James P. Johnson, being first duly sworn, deposes and says:

1. I make this affidavit on my own personal knowledge.

2. I am the Supervisor, Laboratory Services, Clayton Environmental Consultants, Canadian Operations, 949 McDougall Ave., Windsor, Ontario, Canada.

3. I have a Ph.D. degree in Chemistry which was awarded to me by McMasters University, Hamilton, Ontario, Canada in 1983.

4. I am experienced in the development of analytical methods for chemical analysis. I am also experienced in modern instrumental methods of chemical analysis, including, gas chromatography and mass spectrometry. I have also used USPEA, ASTM, NIOSH, MOE and other analytical methods to meet clients' needs.

5. In February, 1990 I was employed at Clayton Environmental Consultants, Canadian Operations. My position was Technical Supervisor, Laboratory Services.

6. On February 7, 1990 I was given a sample of No. 794542 (Clayton Project No. 62922-17) by Laboratory Supervisor Dr. Paul Epstein with instructions to analyse the sample for the presence of tetrachloroethene. (commonly referred to as perchloroethylene).

7. The sample 794542 was a viscous liquid similar in appearance to plastic model silver paint.

8. On March 1, 1990, I personally performed an analysis of the sample using the method of gas chromotography/heated headspace/ECD.

9. During the analysis, the air quality of the laboratory was analyzed and found to be free of contaminants.

10. I placed .8 grams of the sample in a sealed 40 ml. glass bottle and heated the sample at 80 degrees centigrade for thirty minutes.

11. The sample solidified during the heating.

12. After heating the sample, I removed 1 microliter from the head space with a syringe and injected the 1 microliter into a gas chromatograph. The response was high and exceeded the linear calibration limit of the scale.

13. I then removed 1/2 microliter with the syringe and injected it into the gas chromatograph and obtained a reading on the scale. I repeated the procedure 3 times by removing various amounts of the sample and injecting it into the gas chromatograp. Each injection detected tetrachloroethene in the sample.

14. After the analysis of the sample using the gas chromatograph was completed, the solidified sample was analyzed using a gas chromatograph/mass

spectrometer (GC/MS) with selective ion monitoring. Dr. Epstein and myself were present during the analysis. The results positively confirmed that tetrachloroethene was an ingredient of the sample.

15. I have reviewed an affidavit of Dr. Paul Epstein, a copy of which is attached. I find this affidavit to be true.

James P. Johnson, Ph.D.

Subscribed and sworn to before me
at Clayton Environmental Consultants,
Canadian Operations, 949 McDougall Ave.
Windsor, Ontario, Canada

this _____ day of May, 1992

_____

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF MICHIGAN
SOUTHERN DIVISION

NICOLAS KALIARDOS,

Plaintiff,

vs.

GENERAL MOTORS CORPORATION, BASF CORPORATION, DAUBERT INDUSTRIES, INC., H.B. FULLER COMPANY, NATIONAL STARCH & CHEMICAL CORPORATION, and BEAZER EAST, INC., jointly and severally,

Defendants.

Civil Action
Case No. 88-CV-73729-DT

Hon. Paul V. Gadola

AFFIDAVIT OF FRANKLIN C. SCHOONOVER

STATE OF MICHIGAN)
) SS
COUNTY OF OAKLAND)

Franklin C. Schoonover, being first duly sworn, deposes and says:

1. I have a degree in manufacturing engineering from the General Motors Institute, Flint, Michigan.

2. I am experienced in automobile engineering and manufacturing, having been employed in the automobile industry for over thirty (30) years.

3. My experience includes six (6) years in manufacturing, General Motors Fisher Body Division, Cadillac Plant, Detroit, Michigan. This experience includes one (1) year as a production supervisor and one (1) year as a general foreman

in the paint department.

4. My experience also includes twenty-five (25) years at the Ford Motor Company, Dearborn, Michigan. This experience included vehicle design engineering, management and product planning.

5. My job titles at Ford included Product Design Engineer, Manager of the Safety and Services Department, and Chief Product Planning Analyst for safety, damageability and corrosion. I was also represented Ford legal representative on the Damageability Committee of the SAE (Society of Automotive Engineers).

6. On May 31, 1989, I examined used General Motors' vehicles at Highway Auto Parts, 29231 Groesbeck Highway (M-97), Roseville, Michigan. The purpose of my examination was to identify General Motors' vehicles which were in an "as manufactured" condition for obtaining samples of anti-corrosion coatings.

7. Present, during my examination, were Nicolas Kaliardos and David W. Byrd.

8. I examined the vehicles for evidence of repairs, removal or penetration of vapor barriers, drill holes and plugs for applying after-market coatings, paint mis-matches of top coats and primers, and traces of other coatings on top coats. If any such evidence existed, I rejected the vehicles as being unsuitable.

9. I identified as being in an "as manufactured"

condition, a 1984 Buick Skyhawk (Vehicle Identification No. 1G4AS2703EK526551) and a 1983 Oldsmobile Cierra (Vehicle Identification No. 1G3AJ19E2DD406799).

10. Mr. David W. Byrd took samples of a wax coating from the interior of the Oldsmobile Cierra door in my presence for analysis at the Absolute Analytical Laboratory, Clawson, Michigan.

11. One of the 1984 Buick Skyhawk doors was removed from the vehicle in my presence by a Highway Auto Parts' employee. I personally delivered the door to the Absolute Analytical Laboratory, Clawson, Michigan.

12. If called to testify at trial, I will testify that the anti-corrosion coatings on the interior surfaces of the 1983 Oldsmobile Cierra and the 1984 Buick Skyhawk were part of the original equipment of the vehicles.

Further Deponent sayeth not.

Franklin C. Schoonover

Subscribed and sworn to before me
this 21st day of August, 1992.

Carmelina Mullane

Carmelina Mullane, Notary Public,
Oakland County, Michigan
My Commission Expires: March 17, 1993

ABSOLUTE ANALYTICAL LABORATORY
1030-D North Crooks Road
Clawson, Michigan 48017
313-435-5100

SEPTEMBER 17,1992

ALEX RHODES,P.C.
30100 TELEGRAPH RD.,STE. 460
BINGHAM FARMS,MI 48025

RE:
SAMPLE DESCRIPTION :H.B. FULLER FORMULATION WC-2291 & WC-2291-P
ANALYSIS REQUESTED :AROMATIC AND CHLORINATED CMPDS.
HHS/GC-PID-ELCD

PURCHASE ORDER :VERBAL
LABORATORY # :92.01023.266.REPRINT.

Samples of the referenced formulations were analysed for the presence of aromatic hydrocarbons and volatile chlorinated solvents. Our test results are tabulated on the attached pages.

If you have questions or are in need of additional service please feel free to contact us at your earliest convenience.

Absolute Analytical Laboratory,

David W. Byrd
Laboratory Director

AR1/92

ABSOLUTE ANALYTICAL LABORATORY
1030-D North Crooks Road
Clawson, Michigan 48017
313-435-5100

CLIENT :ALEX RHODES,P.C.
SAMPLE DESCRIPTION :H.B. FULLER FORMULATION WC-2291 & WC-2291-P
ANALYSIS REQUESTED :AROMATIC AND CHLORINATED CMPDS.
HHS/GC-PID-ELCD
LABORATORY # :92.01023.266

ANALYTICAL SECTION

1.0 SAMPLE PREPARATION
1.1 SAMPLE DESCRIPTION TABLE

SAMPLE DESCRIPTION

1 QUART CONTAINER MARKED "WC-2291"

1 QUART CONTAINER MARKED "WC-2291-P"

1.1.2 The wax coating samples (ca. 1 gram) were placed into 40 ml vials with a silicone-teflon septa for head space sampling. The containerized samples were incubated at 90 C for approximately one hour. Desorbed volatiles were obtained by puncturing the container and obtaining a sample of the headspace volume which was subsequently injected into the gas chromatograph. The operational conditions of the gas chromatograph were:
T(inject) : COC C T(column) : program T(detect): 200 C
T(initial): 40 C T(rate) : 5 C T(final) : 150 C
T(hold) : 5 MIN Flow mlsec-@C:8.0
Detector 1: PID Detector 2: HECD
Column: 530 um x 30 m. 3.0 um DB624.
The resulting chromatograms were compared to standards of aromatic hydrocarbons and chlorinated hydrocarbons for identification purposes.

2.0 TEST RESULTS
2.1 TABULATED DATA FOR AROMATIC HYDROCARBONS

SAMPLE DESCRIPTION	AROMATIC COMPOUNDS	COMMENTS
WC-2291	DETECTED	Benzene, toluene, ethylbenzene, xylenes
WC-2291-P	DETECTED	Benzene, toluene, ethylbenzene, xylenes

ABSOLUTE ANALYTICAL LABORATORY
1030-D North Crooks Road
Clawson, Michigan 48017
313-435-5100

CLIENT :ALEX RHODES,P.C.
SAMPLE DESCRIPTION :H.B. FULLER FORMULATION WC-2291 & WC-2291-P
ANALYSIS REQUESTED :AROMATIC AND CHLORINATED CMPDS.
HHS/GC-PID-ELCD
LABORATORY # :92.01023.266

2.2 TABULATED DATA FOR CHLORINATED HYDROCARBONS

SAMPLE DESCRIPTION	CHLORINATED COMPOUNDS	COMMENTS
WC-2291	DETECTED	1,1-dichloroethene
WC-2291-P	DETECTED	1,1-dichloroethene

3.0 DISCUSSION
3.1 Our tests show that aromatic hydrocarbons such as benzene, toluene, ethylbenzene and xylenes are found in both the Fuller formulation designated "WC-2291" and "WC-2291-P". Additionally, our test show that 1,1-dichloroethene, a volatile chlorinated hydrocarbon, are present in the reference wax coating materials.

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF MICHIGAN
SOUTHERN DIVISION

NICOLAS KALIARDOS,

Plaintiff,

vs.

GENERAL MOTORS CORPORATION, BASF CORPORATION, DAUBERT INDUSTRIES, INC., H.B. FULLER COMPANY, and H.B. FULLER AUTOMOTIVE PRODUCTS, INC., jointly and severally,

Defendants.

Civil Action
Case No. 88-CV-73729-DT

Hon. Paul V. Gadola

AFFIDAVIT OF DARRELL W. RIDLING

STATE OF MICHIGAN)
) SS
COUNTY OF OAKLAND)

Darrell W. Ridling, being first duly sworn, deposes and says:

1. I am the Plant Manager of Automotive Finishes, Inc., Dearborn, Michigan, and its subsidiary Brighton Coatings, Inc., Brighton, Michigan.

2. I have been employed in the manufacture of coatings for thirty-six (36) years. My work experience includes twenty-two (22) years at the Inmont (BASF) Milford Avenue Detroit Plant. I left Inmont in 1978.

3. My employment at the Milford Plant included batch making, mill loading and quality control, and various management positions.

4. I am familiar with the Inmont (BASF) S51Z001 wax anti-corrosion coating. This coating was manufactured while I was employed at the Milford Avenue Plant to meet General Motors Material Specification 998-1128.

5. At Inmont, I advanced from Production Worker to the position of Superintendent of the Resin Plant.

6. I am very familiar with the manufacture of coatings, including the preparation and use of production batch sheets and quality control.

7. From 1982 to 1990, I was the Chief Officer and the Majority Stockholder of Brighton Paint Manufacturing Inc.

8. I have reviewed seven 1984 Daubert NOX RUST X-151 production batch sheets, General Motors Material Specification 998-1128, and a Daubert Material Safety Sheet, copies of which are attached. I have also reviewed a letter to General Motors from a Daubert Product Manager, Michael A. Dwyer. Mr. Dwyer's letter indicates that NOX RUST X-151 was manufactured to meet General Motors Material Specification 998-1128.

9. General Motors Material Specification 998-1128 requires the solid content of the coating to be established at the time of approval and set forth in the Material Safety Data Sheet.

10. General Motors suppliers are required to certify that each shipment complies with the requirements of General Motors Material Specification 998-1128.

11. Defects in the attached Daubert batch sheets cause me to believe that the Daubert sheets are false or altered.

12. The defects include (1) missing information, (2) failure to comply with the quality control parameter of percent solids, (3) inconsistent data, (4) excessive batch overages, (5) large variations in viscosity and (5) additions of excessive amounts of naphtha.

Darrell W. Ridling

Subscribed and sworn to before me
this 17-11 day of September, 1992.

Notary Public,
County, Michigan
My Commission Expires: 2-13-95

SUZANNE M. O'SULLIVAN
NOTARY PUBLIC Oakland County, Mich.
My Commission Expires: 02-13-95

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF MICHIGAN
SOUTHERN DIVISION

NICOLAS KALIARDOS,

Plaintiff,

vs.

GENERAL MOTORS CORPORATION, BASF CORPORATION, DAUBERT INDUSTRIES, INC., H.B. FULLER COMPANY, and H.B. FULLER AUTOMOTIVE, INC., jointly and severally,

Defendants.

Civil Action
Case No. 88-CV-73729-DT

Hon. Paul V. Gadola

AFFIDAVIT OF DAVID W. BYRD

STATE OF MICHIGAN)
)SS
COUNTY OF OAKLAND)

David W. Byrd, being duly sworn, deposes and says:

I am the owner and Laboratory Director of the Absolute Analytical Laboratory, Inc., 1034-D Crooks Road, Clawson, Michigan. I have a B.S. and M.S. Degree in Biological Science. I am presently completing the course requirements for a Masters Degree in Chemical Engineering at Wayne State University. My professional memberships include the American Chemical Society, ANACHEM, and the Chromatography Society. I have over fourteen years of analytical laboratory experience.

I have reviewed U.S. Patent No. 4,356,036, including the claims, H.B. Fuller WC-2291 and WC 2291-P Material Safety Data Sheets, and H.B. Fuller Automotive, Inc. documents relating to the manufacture of Wax Type Anti-Corrosion coating WC-2291 and WC-2291-P.

Claim 1 of U.S. Patent No. 3,959,530 defines a coating composition

consisting essentially of a mixture of wax residue such as paraffin and microcrystalline wax, perchloroethylene, a petroleum distillate having a boiling point ranging between 350° and 380°F., and a nonionic surfactant such as nonylphenoxypoly(ethyeneoxy)ethanol and a small amount of [N,N,N',N'-tetrakis(2-hydroxypropyl)ethylenediamine].

Fuller Material Safety Data Sheet WC-2291 lists the ingredients of a coating as consisting of microcrystalline wax, VM & P Naphtha, aliphatic oil (Hydro-treated), calcium sulfonate, paraffinic wax and an aliphatic resin. Fuller Material Safety Data Sheet WC-2291-P lists the ingredients of a coating which are the same as WC-2291 except for the added ingredient of mineral spirits.

I also conducted an analyses of Fuller coatings WC-2291 and WC-2291-P for chlorinated solvents. The analyses detected the chlorinated solvent 1,1, dichloroethene and the aromatic solvents benzene, toluene, ethylbenzene, xylene in both the WC-2291 and WC-2291-P coatings.

I have also analysed wax coatings taken from the bottoms of the interiors of late model General Motors' doors. Before I removed the samples from their doors, I inspected the interior of the doors and found no evidence that the wax type coating which I analyzed was other than an original factory coating.

The vehicle doors from which I took samples consisted of a 1987 Chevrolet Celebrity VIN 1G1AW51R8H6211705, a 1988 Oldsmobile Delta 88, VIN IG3HN545C7JM316919, and a 1991 Pontiac Grand Prix, VIN 1G2WJ54T6MF263626.

My analyses of the samples of wax coatings taken from the General Motors' doors detected microcrystalline wax in samples from each of the three doors; perchloroethylene in the samples from the 1987 Celebrity and 1988

Oldsmobile doors; methylene chloride in the sample from the 1991 Pontiac door; and zinc and surfactants in the sample from the 1991 Pontiac Grand Prix Door.

I also forwarded a sample from the 1991 Pontiac door to the Charles Evans and Associates Laboratory in Redwood City, California for an ESCA analysis (Electron Spectroscopy for Chemical Analyses). The ESCA detected evidence of organochlorine compounds, sulfur in oxidized form, and ligand functionalities (chelating functionalities).

I have compared the ingredients of claim 1 of U.S. Patent No. 3,959,530 with the ingredients listed in H.B. Fuller Batch Sheet for WC-2291-P Batch No. A010991 and my analyses of the WC-2291-P coating.

U.S. Patent No. 3,959,530	WC-2291-P
Mixture of a Wax Residue	Multi Wax ML 445
Perchloroethylene	1,1 dichlorethene
Petroleum Distillate B.P. = 350° and 380°F	Mineral Spirits
Nonionic Surfactant	Lockhart Neutral Barium Sulfonate 3605
[N,N,N',N'-tetrakis (2-hydroxypropyl) ethylenediamine] (chelating agent)	Lubrizol 2087 (a dispersion of a Metallo-Complex

The comparison shows that the H.B. Fuller wax type anti-corrosion coating has the ingredients or their equivalents of claim 1 of U.S. Patent No. 3,959,530.

Further deponent sayeth not.

David W. Byrd

Subscribed and sworn to before me
this 19th day of October, 1992

CAROLINA MOLANE
Notary Public, Oakland County, MI
My Commission Expires 17 Yrs

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF MICHIGAN
SOUTHERN DIVISION

NICOLAS KALIARDOS,

Plaintiff,

vs.

GENERAL MOTORS CORPORATION, BASF CORPORATION, DAUBERT INDUSTRIES, INC., H.B. FULLER COMPANY, and H.B. FULLER AUTOMOTIVE INDUSTRIES, INC., jointly and severally,

Defendants.
_____/

Civil Action
Case No. 88-CV-73729-DT

Hon. Paul V. Gadola

AFFIDAVIT OF DR. PETER O. WARNER

STATE OF MICHIGAN)
)
COUNTY OF WAYNE)

Dr. Peter O. Warner, being duly sworn, deposes and says:

I am the Director of Technical Services, Wayne County Air Pollution Control Laboratory, Detroit, Michigan and a member of the adjunct faculty of Wayne State University, Department of Occupational and Environmental Health. I was President of the Association of Analytical Chemists in 1976. In 1979 I received the Anachem Fellow Award. I am presently Chairman of Air and Waste Management Association, Technical Committee EE-6. In 1990 I was Chairman of the AWMA Specialty Conference, Detroit, Michigan.

I have a Ph.D. Degree in Analytical Chemistry. This degree was awarded to me by Wayne State University in 1964. Additional professional experience, awards, and offices in professional societies, together with technical articles I have authored are summarized in the attached resume.

I am intimately familiar with perchloroethylene, air pollutants and air sampling and am the author of the textbook Analysis of Air Pollutants, New York, John Wiley, Inc., 1976. I have worked with perchloroethylene in preparing formulations for industrial use.

I have reviewed Shrader Laboratories, Inc. Report No. A61501 and A61502 and Clayton Environmental Consultants, Inc. Report of Project No. 62922-17 for the purpose of providing an opinion of whether the perchloroethylene detected in samples are contaminants caused by urban atmospheric pollution.

In my opinion, neither the 24.8 ppb perchloroethylene which Shraeder Laboratories, Inc. detected in sample A61502 or the 91 ppm perchloroethylene which Clayton Environmental Consultants, Inc. detected in sample 998-1128 are contaminants caused by atmospheric pollution.

Air sampling data indicates that perchloroethylene in an urban atmosphere is within a range of .07 to .30 ppb. This is substantially below the 24.8 ppb and 91 ppm levels of perchloroethylene which the laboratories detected in the samples.

I am not aware of any wax materials having an affinity to absorb chlorinated solvents from the atmosphere and concentrate the chlorinated solvents to produce levels higher than the levels absorbed from the atmosphere.

I know of no mechanism by which this absorption/concentration could take place.

Dr. Peter O. Warner

Subscribed and sworn to before me
this 16th day of October, 1992

ABSOLUTE ANALYTICAL LABORATORY
1030-D North Crooks Road
Clawson, Michigan 48017
313-435-5100

ALEX RHODES,P.C.
30100 TELEGRAPH ROAD;SUITE 460
BINGHAM FARMS,MI 49025
ATTN:ALEX RHODES

RE:

PROJECT	:EQUIVALENCE TESTING
SAMPLE DESCRIPTION	:ANTI-RUST COATING
TEST OBJECTIVE	:SURFACE TENSION AND ADHESION TESTING
ABSOLUTE LAB I.D.#	:93.01023.1762
DATE REPORTED	:12/30/93

At your request Absolute Analytical Inc. has performed laboratory testing to demonstrate equivalence of chemical substitutes present in General Motors 998-1128/998-2150 wax type anti-corrosion coating, manufactured by BASF Corporation, Daubert Industries, Inc. and H. B. Fuller Automotive Products,Inc.; and the ingredients in the claims of U.S. Patents Nos. 3,959,530 and 4,356,036. Specifically we have performed testing with respect to surface active properties, chelation, and surface degreasing properties. The tests which we have performed to evaluate equivalency include measures of surface tension and adhesion. The criteria used to ascribe equivalence is determined by the definition of any two substances which perform substantially the same overall function, in substantially the same way, to obtain substantially the same overall result.

It should be noted that the chemical substances which were tested are well known and that the equivalence of these substances in the subject coatings were previously developed in Affidavits and depositions of David W. Byrd.

SUMMARY

Our testing for equivalence with respect to surfactants properties, chelation, and chlorinated solvent surface degreasing properties demonstrate equivalency to those chemical agents specified in the claims of U.S. Patent Nos 3,959,530 and 4,356,036. From our test survey we can say that:

1. the following agents are equivalent to the Igepal in surface active properties when mixed with the synthetic mixture of Anti-Rust Compound 998-1128 formula number S51Z001 (formula date 10-23-74):

   stearic acid
   barium sulfonate
   calcium sulfonate
   lead sulfonate

Absolute Analytical Laboratory
Clawson, Michigan
313.435.5100

CLIENT	:ALEX RHODES, P.C.
PROJECT	:EQUIVALENCE TESTING
SAMPLE DESCRIPTION	:ANTI-RUST COATING
TEST OBJECTIVE	:SURFACE TENSION AND ADHESION TESTING
ABSOLUTE LAB I.D.#	:93.01023.1762

SUMMARY (continued)

2. the following agents are equivalent to the Quadrol in surface chelating properties when mixed with the synthetic mixture of Anti-Rust Compound 998-1128 formula number S51Z001 (formula date 10-23-74):

   methylenedianiline
   barium sulfonate
   calcium sulfonate
   lead sulfonate

3. the following agents are equivalent to the perchloroethene in surface degreasing properties when mixed with the synthetic mixture of Anti-Rust Compound 998-1128 formula number S51Z001 (formula date 10-23-74) which was modified to include 1 % Igepal and 0.5 % Quadrol.

   methylene chloride
   trichloroethylene
   1,1 dichloroethene

TEST OUTLINE

The materials were divided into three groups based upon their functions in the wax type anti-corrosion coating under investigation. These groups consisted of surfactants (surface active agents), chelating agents, and chlorinated solvents. In cases were dual functions were ascribed to a chemical substance it was included in both test series.

The ingredient and its functional equivalent were evaluated by testing in a wax type anti-corrosion coating. The wax-type coating used for the test series was supplied by Nicolas Kaliardos together with a BASF S51Z001 (GM998-1128) Master Formula Sheet which Mr. Kaliardos stated was used for preparing the coating (see attached copy).

Absolute Analytical Laboratory
Clawson, Michigan
313.435.5100

CLIENT :ALEX RHODES, P.C.
PROJECT :EQUIVALENCE TESTING
SAMPLE DESCRIPTION :ANTI-RUST COATING
TEST OBJECTIVE :SURFACE TENSION AND ADHESION TESTING
ABSOLUTE LAB I.D.# :93.01023.1762

1.0 SURFACTANTS

1.1 Surfactants are surface active agents which reduce the surface tension of liquids. The reduction of the surface tension of a liquid will allow for the greater dispersal of the liquid. With respect to the wax coatings the function of the surfactant is to improve the ability the coating to spread over the surface of the metal. The measurement of surface tension is a widely practiced method for the assessment of surface active agents. Specifically, we have performed surface tension measurements of a synthetic mixture of Anti-Rust Compound 998-1128 formula number S51Z001 (formula date 10-23-74) which was diluted with xylene in order to effect surface measurement. Surface tension measurements of the Anti-Rust coating mixed with Igepal were compared to surface tension measurements of the same Anti-Rust coating 998-1128 in combination with the following compounds:

stearic acid
barium sulfonate
calcium sulfonate
lead sulfonate

1.2 The mixtures were evaluated for surface tension reduction using the capillary tube method as outlined in Findlay's Practical Physical Chemistry, 8th edition, pages 94-97. Our results are tabulated on the attached data sheets (see table I).

2.0 ADHESION EVALUATION OF CHELATING MIXTURES

2.1 The chelating agents bind to metals and allow for the greater solution of metals. The inclusion of the chelating agent Quadrol resulted in better binding to the metal substrates. In order to evaluate equivalence of Quadrol we have performed adhesion measurements of a synthetic mixture of Anti-Rust Compound 998-1128 formula number S51Z001 (formula date 10-23-74) and Quadrol to determine if surface activity equivalence exists between the Anti-Rust Compound 998-1128 when combined with the following compounds:

methylenedianiline
barium sulfonate
calcium sulfonate
lead sulfonate

Absolute Analytical Laboratory
Clawson, Michigan
313.435.5100

CLIENT :ALEX RHODES, P.C.
PROJECT :EQUIVALENCE TESTING
SAMPLE DESCRIPTION :ANTI-RUST COATING
TEST OBJECTIVE :SURFACE TENSION AND ADHESION TESTING
ABSOLUTE LAB I.D.# :93.01023.1762

2.2 The assessment of the chelating agent upon the various test mixtures was evaluated by applying the test mixture to a metal substrate as a film. The dried film was then evaluated for adhesion using the American Society for Testing Materials test method D 3359-90 "Standard Test Methods for Measuring Adhesion by Tape Test". Our test results are tabulated in table II (see attachment).

3.0 ADHESION EVALUATION OF CHLORINATED ANTI-RUST MIXTURES

3.1 The chlorinated solvents in Anti-Rust formulations act as degreasing agents which improve adhesion to the metal substrate which may be covered with a mill oil or similar protective oil. In order to evaluate equivalence of perchloroethene in Anti-Rust formulations we have performed adhesion measurements of a synthetic mixture of Anti-Rust Compound 998-1128 formula number S51Z001 (formula date 10-23-74) which was modified to include 1 % Igepal and 0.5 % Quadrol. We refer to this mixture as "B". To "B" we have added the following chlorinated solvents:

methylene chloride
trichloroethylene
1,1 dichloroethene

3.2 The assessment of the chlorinated solvents upon the various test mixtures was evaluated by applying the test mixture to a metal substrate which been treated with a film of mill oil. The dried film was then evaluated for adhesion using the American Society for Testing Materials test method D 3359-90 "Standard Test Methods for Measuring Adhesion by Tape Test". Our test results are tabulated in table III (see attachment).

If you have questions or are in need of additional service please feel free to contact us at your earliest convenience.

Absolute Analytical Laboratory,

David W. Byrd, M.S.
Laboratory Director

enclosures (4)

TABULAR SURMMARY OF TEST DATA; REPORT 93.01023.1762

I. SURFACTANTS

TREATMENT	TEST 1	TEST 2	TEST3	AVE
20ml A+0.2 g IGEPAL	16.0	16.0	16.0	16.0
20ml A+0.2 g STEARIC ACID	15.5	15.5	15.5	15.5
20ml A+0.2 g BARIUM SULFONATE	16.0	16.0	16.2	16.07
20ml A+0.2 g LEAD SULFONATE	16.2	16.2	16.0	16.13
20ml A+1.0 g CALCIUM SULFONATE	16.2	16.1	16.2	16.17

II. ADHESION EVALUATION OF CHELATING MIXTURES

The tables IIA., IIB., AND III. refer to the Standard Test Methods for Measuring Adhesion by Tape Test (ASTM D 3359-90). Tables IIA. and III. involve Test Method A: X-Cut Tape Test. Table IIB. involves Test Method B: Cross-Cut Tape Test.

TABLE IIA.

TREATMENT	TEST 1A	TEST 2A
A + .5% QUADROL	1	1
A + .5% MDA	1	1
A + .5% BARIUM SULFONATE	1	1
A + .5% CALCIUM SULFONATE	1	1
A + .5% LEAD SULFONATE	1	1

TABLE IIB.

TREATMENT	TEST 1B	TEST 2B	TEST 3B
A + .5% QUADROL	1	1	2
A + .5% MDA	1	1	2
A + .1% BARIUM SULFONATE	2	2	N.T.
A + .5% CALCIUM SULFONATE	2	3	2
A + .5% LEAD SULFONATE	3	3	3

III. ADHESION EVALUATION OF CHLORINATED ANTI-RUST MIXTURES

In all treatments we have used the submitted synthetic mixture of Anti-Rust Compound 9981128 (formula S51Z001 10/23/74) plus 1 % Igepal and 0.5% Quadrol. We refer to this mixture as "B". These formulations were tested on a metal substrate which had be covered with a thin film of mill oil.

TABLE III.

TREATMENT	TEST 1A	TEST 2A
B + PERCHLOROETHENE	2	2
B + METHYLENE CHLORIDE	2	2
B + TRICHLORETHYLENE	2	2
B + 1,1 DICHLORETHENE	2	2

TABLE OF TEST MATERIALS

COMMON NAME	ACTIVE INGRIEDIENT	SUPPLIER
MDA-(13,245-4)	4,4-METHYLENEDIANILINE	ALDRICH
BARIUM SULFONATE	BARIUM PETRONATE	WITCO (36504)
CALCIUM SULFONATE	CALCIUM ALKYLARYL-SULFONATE (VANCORR 073)	R.T. VANDERBILT (48451)
NA-SUL-LS (3839)	LEAD SULFONATE	KING INDUSTRIES
QUADROL	N,N,N',N'-TETRAKIS(2-HY DROXYPROPYL)ETHYLEDIAMINE	BASF (588540)
STEARIC ACID	INDUSTRENE 7018	WITCO (93271011)
PERCHLOROETHENE	PERCHLOROETHENE	DOW CHEMICAL
DICHLOROETHENE	1,1-DICHLOROETHENE 99%	CHEM SERVICE (119-32B)
IGEPAL	IGEPAL CO-530	RHONE-POULENC
TRICHLOROETHENE	TECH GRADE	TROY SCIENTIFIC

13650 E. TEN MILE RD., P.O. BOX 306
WARREN, MICH. 48090

MATERIAL SAFETY DATA SHEET

SECTION I

PRODUCT NAME OR NUMBER (as it appears on label) WC-2291	
MANUFACTURER'S NAME H.B. FULLER AUTOMOTIVE PRODUCTS, INC.	EMERGENCY TELEPHONE NO. (313) 776-5000
ADDRESS (Number, Street, City, State and Zip Code) 13650 EAST TEN MILE ROAD, WARREN, MI 48089	MANUFACTURER'S D-U-N-S NO. 18-966-3206
HAZARDOUS MATERIAL DESCRIPTION, PROPER SHIPPING NAME, HAZARD CLASS, HAZARD ID NO. (49 CFR 172.101) COMPOUND VEHICLE SEALER - FLAMMABLE LIQUID N.O.S. UN 1993	
ADDITIONAL HAZARD CLASSES (as appropriate) NONE	
CHEMICAL FAMILY HYDROCARBON	FORMULA MIXTURE

**ALL INGREDIENTS LISTED ON TSCA INVENTORY.

SECTION II — INGREDIENTS (list all ingredients)

CAS REGISTRY NO.	%W (circled)	%V	CHEMICAL NAME(S)	Listed as a Carcinogen in NTP, IARC or OSHA 1910(z) (specify)
63231-60-7	15-30		MICROCRYSTALLINE WAX	NONE
8032-32-4	20-40		VM & P NAPHTHA	NONE
64741-89-5 64742-52-5	0-5		ALIPHATIC OIL (HYDRO-TREATED)	NONE
61789-86-4	5-10		CALCIUM SULFONATE	NONE
8002-74-2	5-10		PARAFINIC WAX	NONE
64742-16-1	15-30		ALIPHATIC HYDROCARBON RESIN	NONE

SECTION III — PHYSICAL DATA

BOILING POINT 244 °F ___ °C		SPECIFIC GRAVITY (H,O = 1)	0.91		
VAPOR PRESSURE ___ °F ___ °C [X] 2 mm Hg [ ] ots		PERCENT VOLATILE BY VOLUME (%)	41.5	PERCENT SOLID BY WEIGHT (%)	62
VAPOR DENSITY (AIR = 1)	4.4	EVAPORATION RATE (TOLUENE = 1)	0.45		
SOLUBILITY IN WATER	NIL	pH =	N/A		
APPEARANCE AND ODOR CARMEL COLORED LIQUID - MILD ODOR				IS MATERIAL: (LIQUID) SOLID GAS PASTE POWDER	

SECTION IV — FIRE AND EXPLOSION HAZARD DATA

FLASH POINT 50 °F ___ °C method used T.C.C.	FLAMMABLE LIMITS: LEL 1.1 UEL 5.0
EXTINGUISHING MEDIA CO2, DRY CHEMICAL, FOAM	
SPECIAL FIRE FIGHTING PROCEDURES WATER MAY BE INEFFECTIVE DUE TO FROTHING.	
UNUSUAL FIRE AND EXPLOSION HAZARDS MAY GIVE OFF CO ON COMBUSTION. FLAMMABLE SOLVENTS HEAVIER THAN AIR.	

SECTION V-HEALTH ...ZARD DATA

EFFECTS OF OVEREXPOSURE — Conditions to Avoid	THRESHOLD LIMIT VALUE PERMISSIBLE EXPOSURE LIMIT — TWA 350 MG/M3
HEADACHES OR DIZZINESS	OTHER LIMIT (XX) MAC 500 PPM

PRIMARY ROUTES OF ENTRY Inhalation (X) Skin Contact ( ) Other (specify)

EMERGENCY AND FIRST AID PROCEDURES REMOVE TO FRESH AIR.

SECTION VI-REACTIVITY DATA

STABILITY	UNSTABLE		CONDITIONS TO AVOID
	STABLE	XX	SPARKS OR OPEN FLAMES

INCOMPATIBILITY (materials to avoid) STRONG OXIDIZERS

HAZARDOUS DECOMPOSITION PRODUCTS: MAY GIVE OFF CO ON COMBUSTION.

HAZARDOUS POLYMERIZATION	MAY OCCUR		CONDITIONS TO AVOID
	WILL NOT OCCUR	XX	N/A

SECTION VII-SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED DIKE LARGE SPILLS. USE ABSORBANT ON SMALL SPILLS; AVOID SPARKS OR FLAMES.

WASTE DISPOSAL METHOD DISPOSE OF IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REGULAT

CERCLA (Superfund) REPORTABLE QUANTITY (in lbs) ONE POUND - (CERCLA STATUTORY RQ)

RCRA HAZARDOUS WASTE NO. (40 CFR 261.33) D001

VOLATILE ORGANIC COMPOUND (VOC) (as packaged, minus water) 2.6 LBS.

(X) Theoretical 2.6 lb/gal ( ) Analytical ____ lb/gal

SECTION VIII-SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (specify type) YES; IF MAC OF 500 PPM IS EXCEEDED (CHARCOAL).

VENTILATION	LOCAL EXHAUST (Specify Rate) PER PLANT REQUIREMENT	SPECIAL	NONE
	MECHANICAL (General) (Specify Rate) 60 FEET PER MINUTE	OTHER	NONE

PROTECTIVE GLOVES (specify type)	(NEOPRENE TYPE) FOR CLEANLINESS	EYE PROTECTION (specify type)	SAFETY GLASSES OR EYE SHIELD PER PLANT RE-
OTHER PROTECTIVE EQUIPMENT	NONE		QUIREMENTS.

SECTION IX-SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING STORE AWAY FROM OPEN FLAME, STORE INSIDE BELOW 95°F.

OTHER PRECAUTIONS NONE

REV 5/8/90

DATE PREPARED: MAY 15, 1989

NAME: MIKE PELLNY

TITLE: R&D TECHNICAL DIRECTOR

SIGNATURE: Mike Pellny

H.B. FULLER AUTOMOTIVE PRODUCTS, INC.
13650 E. TEN MILE RD., P.O. BOX 306
WARREN, MICH. 48090

MATERIAL SAFETY DATA SHEET

SECTION I

PRODUCT NAME OR NUMBER (as it appears on label) WC-2291-P	
MANUFACTURER'S NAME H.B. FULLER AUTOMOTIVE PRODUCTS, INC.	EMERGENCY TELEPHONE NO. (313) 776-5000
ADDRESS (Number, Street, City, State and Zip Code) 13650 EAST TEN MILE ROAD, WARREN, MI 48089	MANUFACTURER'S D-U-N-S NO. 18-966-3206
HAZARDOUS MATERIAL DESCRIPTION, PROPER SHIPPING NAME, HAZARD CLASS, HAZARD ID NO. (49 CFR 172.101) COMPOUND BODY SEALER - FLAMMABLE LIQUID/FLAMMABLE LIQUID NOS LIQUID	
ADDITIONAL HAZARD CLASSES (as appropriate) NONE	
CHEMICAL FAMILY PETROLEUM DISTILLATES	FORMULA MIXTURE

*ALL INGREDIENTS LISTED ON TSCA INVENTORY.

SECTION II — INGREDIENTS (list all ingredients)

CAS REGISTRY NO.	%W	%V	CHEMICAL NAME(S)	Listed as a Carcinogen in NTP, IARC or OSHA 1910(z) (specify)
63231-60-7	20	-30	MICROCRYSTALLINE WAX	NONE
8032-32-4	30	-40	VM & P NAPHTHA	NONE
64741-88-4	1-5		ALIPHATIC OIL - SEVERELY HYDROGENATED	NONE
61789-86-4	5	-10	CALCIUM SULFONATE	NONE
8002-74-2	5	-10	PARAFINIC WAX	NONE
68131-47-5	10	-20	ALIPHATIC RESIN	NONE
8032-32-4	1	-5	MINERAL SPIRITS	NONE

SECTION III — PHYSICAL DATA

BOILING POINT 244 °F ___ °C		SPECIFIC GRAVITY (H_2O = 1)	0.839	V.O.C.	2.8
VAPOR PRESSURE ___ °F ___ °C MAX 2.0 ☐ mm Hg ☐ psi		PERCENT VOLATILE BY VOLUME (%)	60	PERCENT SOLID BY WEIGHT (%)	60%
VAPOR DENSITY (AIR = 1)	4.4	EVAPORATION RATE (= 1)	0.45		
SOLUBILITY IN WATER	NIL	pH =	N/A		
APPEARANCE AND ODOR CARMEL COLORED LIQUID - MILD ODOR				IS MATERIAL: GAS PASTE (LIQUID) SOLID POWDER	

SECTION IV — FIRE AND EXPLOSION HAZARD DATA

FLASH POINT 50 °F ___ °C method used T.C.C.	FLAMMABLE LIMITS LEL 1.1 UEL 5.0
EXTINGUISHING MEDIA	CO_2, DRY CHEMICAL, FOAM
SPECIAL FIRE FIGHTING PROCEDURES	WATER MAY BE INEFFECTIVE DUE TO FROTHING.
UNUSUAL FIRE AND EXPLOSION HAZARDS	FLAMMABLE SOLVENTS, HEAVIER THAN AIR.

SECTION V-HEALTH HAZARD DATA

EFFECTS OF OVEREXPOSURE — Conditions to Avoid	THRESHOLD LIMIT VALUE / PERMISSIBLE EXPOSURE LIMIT / OTHER LIMIT
HEADACHE OR DIZZINESS; MAY REMOVE OIL FROM SKIN.	MAC 500 PP

PRIMARY ROUTES OF ENTRY Inhalation [X] Skin Contact [X] Other (specify)

EMERGENCY AND FIRST AID PROCEDURES REMOVE TO FRESH AIR.

SECTION VI-REACTIVITY DATA

STABILITY	UNSTABLE		CONDITIONS TO AVOID SPARKS OR OPEN FLAMES.
	STABLE	XX	

INCOMPATIBILITY (materials to avoid) STRONG OXIDIZERS.

HAZARDOUS DECOMPOSITION PRODUCTS: MAY FORM CO_2 - CO ON COMBUSTION.

HAZARDOUS POLYMERIZATION	MAY OCCUR		CONDITIONS TO AVOID STRONG OXIDIZERS
	WILL NOT OCCUR	XX	OPEN FLAMES

SECTION VII-SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

AVOID SPARKS OR OPEN FLAMES.

WASTE DISPOSAL METHOD DISPOSE OF IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REGULATI

CERCLA (Superfund) REPORTABLE QUANTITY (in lbs) ONE POUND - (CERCLA STATUTORY RQ) ...

RCRA HAZARDOUS WASTE NO. (40 CFR 261.33) D001

VOLATILE ORGANIC COMPOUND (VOC) (as packaged, minus water) 2.8

[X] Theoretical 2.8 lb/gal [ ] Analytical _____ lb/gal

SECTION VIII-SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (specify type) YES, IF MAC OF 500 PPM IS EXCEEDED (CHARCCAL).

VENTILATION	LOCAL EXHAUST (Specify Rate)		SPECIAL
	MECHANICAL (General) (Specify Rate)	60 FEET PER MINUTE	OTHER

PROTECTIVE GLOVES (specify type)	NEOPRENE TYPE (FOR CLEANLINESS)	EYE PROTECTION (specify type)	SAFETY GLASSES / EYE SHIELD PER
OTHER PROTECTIVE EQUIPMENT	NONE		PLANT REQUIREMEN

SECTION IX-SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING STORE AWAY FROM OPEN FLAMES AND SPARKS

OTHER PRECAUTIONS VAPORS HEAVIER THAN AIR.

REV 9/13/89
REV 4/4/90

DATE PREPARED: MAY 15, 1989

NAME: MIKE PELLNY

TITLE: R&D TECHNICAL DIRECTOR

SIGNATURE: Mike Pellny

BEST AVAILABLE COPY

/LS

11 84

GENERAL MOTORS CORPORATION
MATERIAL SAFETY DATA SHEET

SECTION I

PRODUCT NAME OR NUMBER (as it appears on label) Nox Rust X-170	GM COMMON CODE 498-2150
MANUFACTURER'S NAME Daubert Chemical Company	EMERGENCY TELEPHONE NO. 312-496-7350
ADDRESS (Number, Street, City, State and Zip Code) 4700 S. Central Ave., Chicago, IL 60638	MANUFACTURER'S D-U-N-S NO.
HAZARDOUS MATERIAL DESCRIPTION, PROPER SHIPPING NAME, HAZARD CLASS, HAZARD ID NO. (49 CFR 172.101) Flammable Liquid	
ADDITIONAL HAZARD CLASSES (as applicable)	
CHEMICAL FAMILY Wax/Resin Dispersion	FORMULA

SECTION II — INGREDIENTS
(list all ingredients)

CAS REGISTRY NO.	%W	%V	CHEMICAL NAME(S)	Listed as a Carcinogen in NTP, IARC or OSHA 1910(z) (specify)
8032-32-4	42		VM&P Naptha	NO
64742-61-6	<20		Petroleum Wax	NO
94742-16-1	<40		Hydrocarbon Resin	NO
25619-56-1	< 3		Barium Sulfonates	NO
7631-86-9	T		Silica	NO
64741-97-5 and/or 64742-53-6	<10		Petroleum Oil (Severely solvent refined and/or severely hydro treated)	NO

SECTION III — PHYSICAL DATA

BOILING POINT 230 °F ___ °C		SPECIFIC GRAVITY (H_2O = 1)	0.868		
VAPOR PRESSURE @ 77 °F ___ °C ☒ mm Hg ☐ psi	2.0	PERCENT VOLATILE BY VOLUME (%)	46	PERCENT SOLID BY WEIGHT (%)	60
VAPOR DENSITY (AIR = 1)	> 1	EVAPORATION RATE (Butyl Acetate = 1)	0.45		
SOLUBILITY IN WATER	NIL	pH =	NA		
APPEARANCE AND ODOR Tan colored viscous liquid/solvent odor		IS MATERIAL: GAS PASTE (LIQUID) SOLID POWDER			

SECTION IV — FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Min.) 50 °F ___ °C method used TCC	FLAMMABLE LIMITS	LEL 0.6	UEL 6.0
EXTINGUISHING MEDIA CO_2, Dry Chemical, Foam			
SPECIAL FIRE FIGHTING PROCEDURES Treat as petroleum solvent fire.			
UNUSUAL FIRE AND EXPLOSION HAZARDS None			

SECTION V-HEALTH HAZARD DATA

EFFECTS OF OVEREXPOSURE — Conditions to Avoid: Loss of coordination	THRESHOLD LIMIT VALUE ☒ 200 / PERMISSIBLE EXPOSURE LIMIT ☐
Drowsiness	OTHER LIMIT ☐

PRIMARY ROUTES OF ENTRY Inhalation ☒ Skin Contact ☐ Other (specify)

EMERGENCY AND FIRST AID PROCEDURES: Remove to fresh air. Seek medical attention.

SECTION VI-REACTIVITY DATA

STABILITY	UNSTABLE		CONDITIONS TO AVOID
	STABLE	X	

INCOMPATIBILITY (materials to avoid): Oxidizing agents

HAZARDOUS DECOMPOSITION PRODUCTS: Products of combustion, CO_2, CO

HAZARDOUS POLYMERIZATION	MAY OCCUR		CONDITIONS TO AVOID
	WILL NOT OCCUR	X	

SECTION VII-SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Eliminate all source of ignition. Absorb into inert media and remove.

WASTE DISPOSAL METHOD: Treat as petroleum solvent/wax blend.

CERCLA (Superfund) REPORTABLE QUANTITY (in lbs)

RCRA HAZARDOUS WASTE NO. (40 CFR 261.33): D001

VOLATILE ORGANIC COMPOUND (VOC) (as packaged, minus water)

☒ Theoretical 2.89 lb/gal ☐ Analytical _____ lb/gal

SECTION VIII-SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (specify type): NIOSH /MESA approved TC-23C-50

VENTILATION	LOCAL EXHAUST (Specify Rate) Sufficient if not confined to small area.	SPECIAL
	MECHANICAL (General) (Specify Rate)	OTHER

PROTECTIVE GLOVES (specify type)	EYE PROTECTION (specify type) Goggles

OTHER PROTECTIVE EQUIPMENT: Rubber shoes and apron if excessive splashing is expected.

SECTION IX-SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING: Store away from high heat and open flames.

OTHER PRECAUTIONS

Seller agrees not to assert any claim (other than a claim for a patent infringement) against General Motors Corporation for any use or disclosure of any technical data or information disclosed in connection with this questionnaire.

PLEASE COMPLETE QUESTIONNAIRE AND RETURN TO:	Name (print)
	Signature
	Title Chief Chemist
	Date